Collaboration in extended requests and their fulfilment in speech and language therapy telemedicine consultations

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Abstract

Telemedicine technologies have become increasingly popular as a means of delivering general and specialist healthcare to individuals and communities situated in rural areas who have difficulties in accessing health-care services. The importance of interaction between patients and healthcare professionals has been consistently highlighted with previous research on face-to-face consultations demonstrating that interaction can impact on patients' understanding of medical information, their perception of their own disease and their quality of life (Onor & Misan, 2006; Miller, 2003). This is particularly relevant in speech language therapy, where conversation may already be challenging, and differing methods of communication maybe required. The introduction of telemedicine into health-care provider-patient interaction adds an additional dynamic in which these interactions occur. However, limited research has explored how conversations are negotiated when delivered via telemedicine, especially in challenging contexts such as speech and language therapy.

The present study drew on 16 consultations (8 hours 58 minutes) using telemedicine technologies in speech and language therapy. The study drew on both audio and visual data examining naturally occurring interaction between a specialist speech language therapist, general speech language therapist and patient and was analysed using Conversation analysis. The analysis considers how medical tasks are achieved through extended request sequences during physical examinations when using telemedicine. The results demonstrate that extended request sequences were framed as a collaborative endeavour through the plural pronoun 'we' which treated participants as equal in the fulfilment of medical tasks. Participants manage the interactional novelties that occur with telemedicine such as lack of proximity and visual access during the fulfilment of extended requests. In so doing, the results demonstrate the integral role of the general speech language therapist who not only facilitates request making when required, but also assists in the fulfilment of initial requests. Implications and directions for future research are considered regarding extended request sequences as a means of achieving medical tasks which overcome barriers such as lack of proximity and visual access, thus facilitating effective interpersonal interaction during telemedicine speech language therapy consultations.

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1 INTRODUCTION

1.1 Background to the Study

Telemedicine is considered as the use of audio-visual information technologies to facilitate the delivery of health-care to individuals and communities where accessibility to health-care is problematic, for example due to distance (WHO, 2010). Telemedicine has been perceived as a beneficial medium to provide care to rural communities and individuals who are geographically isolated (Newton, 2014). Despite this a prominent theme within the literature concerns telemedicine's failure to become a standardised means for the delivery of health care for both patients and health-care professionals (May et al, 2003a; 2003b; 2007; 2009; Miller, 2003). Concerns about the ability to build rapport and achieve effective communication between health care professionals and patients when consulting over telemedicine has been identified as a barrier to implementation (Engel, 1989). Effective interpersonal communication during consultations has been shown to have implications regarding a patient'sunderstanding, their perception of medical information, their own health status and their satisfaction with medical encounters (Onor & Misan, 2006; Miller, 2003); however, research to explore how healthcare professionals and patients interact when using telemedicine technology is relatively underexplored. It has been suggested by those who have explored this interaction that clinicians are managing interpersonal attributes such as verbal and non-verbal communication skills and relational skills within telemedicine consultations to achieve effective communication and provide quality care to patients (Henry, Block, Ciesla, McGowan & Vozenilek, 2016). However, effective interpersonal communication becomes particularly important for individuals already experiencing communication difficulties. One such demographic concerns individuals suffering from head and neck cancers undergoing speech language therapy rehabilitation. Incidence rates of individuals suffering from head and neck cancers have been increasing over recent years (Cancer Research UK, 2018) with an overall increase of 31% for males and females between 1993-1995 and 2013-2015 (Cancer Research UK, 2018). With estimated shortages of speech language therapists (Mashima & Doarn, 2008) and increased incident rates of head and neck cancer, the demand for specialist speech and language therapists is increasing. However, the ability to deliver specialist services in rural areas pose economic challenges and telemedicine has been explored in some areas as a potential solution enabling specialist services to be delivered in remote areas without the need for increased travel for either the patient or specialist therapist in question. In this context, the

patient, supported by a general speech and language therapist connects to the specialist therapist at a different site. Consultations include a range of required tasks, including physical examinations. Understanding how this complex three-way interaction is managed in this novel context is therefore important for ensuring high quality of care for rural and remote patients.

1.2 Purpose of the Study

The purpose of the current study is to develop understanding of how medical tasks are achieved when using telemedicine videoconferencing. In traditional face to face consultations, medical tasks can be easily fulfilled between patients and health-care professionals given their proximity in relation to one another. With the implementation of telemedicine technologies to healthcare interactions, further understanding of the challenges of, and ways in which health care professionals and patients interactionally manage the novelties in achieving medical tasks are important to identify. A means by which this can be investigated is conversation analysis. Conversation analysis allows for the study of interaction under naturally occurring conditions. Using this form of analysis allows for an understanding of the different interactional means by which medical tasks are achieved in telemedicine videoconferencing consultations. This can result in informing aspects of good practice in communicating with patients which differ from face to face interactions and present different challenges.

1.3 Aim of the Study

The aim of the current study is to understand how medical tasks are achieved through extended requests in physical examination sequences during speech language therapy consultations delivered via telemedicine videoconferencing. The study also examines how different participants in the consultation are involved in achieving extended requests when using telemedicine videoconferencing.

1.4 The Design of the Study

The following study was conducted with a Macmillan telemedicine speech language therapy service that linked a specialist speech and language consultant to patients at 6 different general hospitals located in rural locations across mid Wales. Speech language therapy was supported by a general speech and language therapist at the patient end. Telemedicine consultations were recorded using two cameras capturing audio and visual data. 16 consultations were recorded spanning 8 hours and 58 minutes. The naturally occurring interactions between patients and speech language therapists were analysed using conversation analysis.

1.5 Significance of the Thesis

This study is the first to use conversation analysis to examine adults with speech language difficulties accessing telemedicine services. This provides a novel opportunity to inform clinical practice through developing understanding of how health-care professionals can achieve medical tasks within telemedicine services whilst facilitating good interpersonal communication and managing interactional restrictions which occur due to the use of telemedicine. This study also informs academic knowledge through developing understanding of how interactional practices are formulated and designed in telemedicine and how medical tasks are collaboratively achieved through these practices.

1.6 Structure of the Thesis

This introductory chapter has presented the background of the study to provide a context for the research. Consideration has also been given to the purpose and aims of the study, design of the study and significance of the research.

Chapter Two examines the existing literature on health-care professional and patient interaction, followed by speech and language therapy for individuals suffering from head and neck cancers and the role of communication in speech and language therapy. Telemedicine technologies are discussed with consideration to their application in speech and language therapy. The different analytic approaches used to research health-care professional patient interaction are then discussed, examining the interactional approaches of process analysis, the

Roter interactional analysis system (RIAS) and conversation analysis, before providing a background to the analytic framework of conversation analysis which was adopted for the current study. The conversation analysis literature is then explored with a focus on 'requesting' before considering the broader literature on the role of embodied actions and more specifically the role of embodied actions in healthcare. This provides context for the analytic focus of the current study. Towards the end of the chapter, the statement of research questions is provided.

Chapter Three provides context regarding the methodological details including the participants, setup and broader structure of speech language therapy teleconsultations, procedure, ethical considerations and analytic process with conversation analysis, the transcription of extracts and the identification of the phenomena.

Chapter Four presents the analysis, examining extended request sequences within physical examinations. Consideration is given to the initial request and aspects of its design consisting of initial requests as projecting a course of action and the framing of initial requests as a collaborative endeavour. Consideration is also given to the embodied actions accompanying initial requests. This is followed by the fulfilment of the request, with descriptions of the preparatory actions (actions of incipient fulfilment) and the formats of responding to requests. Throughout the analysis, consideration is given to the role of the general speech language therapist as facilitating request making and the fulfilment of the requests.

Chapter Five presents a discussion of the study's findings. Extended requests as collaborative endeavours are discussed in relation to previous literature. Furthermore, the integral role of the General speech and language therapist (GSLT) is discussed in facilitating request making and the fulfilment of requests. Concluding sections of the thesis consider the considerations for development, the theoretical and practical implications of the study, before finishing with the final concluding remarks.

2 LITERATURE REVIEW

2.1 Introduction

This section considers the existing literature on health-care professional and patient interaction. From this, focus is given to the role of specialist speech and language therapy in the context of head and neck cancer and the need for effective communication in this context. This is followed by a focus on the telemedicine research identifying a paucity of literature addressing the nuances of interaction within this medium. This is further examined within the context of speech and language therapy and concludes by identifying the barriers that telemedicine can create for physical examinations, particularly in a context where verbal communication may be challenging.

The different analytic approaches to understanding health care professional and patient interaction are then discussed. This is followed by a more detailed consideration of conversation analysis and its relevance within this specialist context. Given the interest in achieving physical examinations remotely and the challenges of effective communication in specialist speech and language therapy, focus is given to how requests are used to elicit the assistance of others and how embodied actions can function to support verbal utterances.

2.2 Health care professional-patient Interaction

Communication is a basic, yet essential aspect of establishing a relationship between individuals. This becomes particularly relevant within health care professional-patient interaction where effective therapeutic rapport must be established between individuals operating at different levels of authority, knowledge and understanding (Engel, 1989; Ong, Haes, Hoos & Lammes, 1995) and at a time when patients are in a position of vulnerability, experiencing feelings of anxiety and unease (Spyropoulos, 2017). The importance of effective communication therefore lies in the ability to achieve optimal medical outcomes for the patient, whilst reducing unsatisfactory encounters which result in lower levels of patient satisfaction (Kenny et al, 2010).

Doctor-patient interaction has long been a domain of enquiry with acknowledgement that the practice of medicine and restoration of an individual's health is intimately associated with the ways in which health care professionals and patients communicate (Heath, 1986). This interaction between doctors and patients has been described as "*the vehicle by which much of*

the curing and caring of medicine is conveyed" (Roter & Hall, 1989, p. 163). Parson's (1951) *The Social System* outlines a scheme for the analysis of the structures and processes of different social systems and is argued to have conceptualised the domain of medicine as a social system (Heritage & Maynard, 2006a). Parson's work opened the way for study into doctor patient interaction and following this Korsch and Negrete (1972) and Byrne and Long (1976) established doctor patient interaction as a viable research domain for exploration (Heritage & Maynard, 2006a). These two pioneering studies based on vast collections of data of medical interactions were the first attempts to quantify aspects of interaction during doctor patient communication and demonstrated that the systematic study of health care communication was achievable (Heritage & Maynard, 2006a).

From the works of these authors, further studies have been conducted that have demonstrated the different ways in which health care professionals and patients communicate, as well as the importance of communication as a central component in the delivery of health care (Roter, 1983; Stewart, 1995; Ha & Longnecker, 2010). For example, research has identified three main objectives for effective health care professional- patient communication: to create a good interpersonal relationship, to facilitate the exchange of medical information and to make treatment related decisions as a collaborative process (Ong et al, 1995; Ha & Longnecker, 2010).

It appears therefore that effective health care professional- patient communication does not solely rely on communication itself, but also the doctor's interpersonal skills (Duffy, Gordon, Whelan, Cole-Kelly & Frankel, 2004). These skills are a crucial component to advocating a relationship centred approach between doctors and patients, whereby each party is seen as an equal individual within the interaction (Ong ,De Haes, Hoos, & Lammes, 1995); Kenny et al, 2010). An ineffective interpersonal relationship alongside ineffective communication can result in a lack of patient understanding regarding their illness which can subsequently impact an individual's expectations and involvement regarding the treatment process (Baile et al, 2005). This has implications for patients' perceptions of their doctor's competence (Hall & Roter, 1981) as well as the patient's recall, compliance and emotional regulation with medical issues (Begum, 2014).

The effective exchange of information is also an important facet of health care professional patient interaction consisting of information giving and seeking (Ong et al, 1995). Through the effective exchange of information, doctors are more easily able to seek relevant information from the patient and therefore more accurately identify medical complications,

whilst reducing the incidence of clinical errors through miscommunication (Begum et al, 2014).

Finally, the collaborative decision-making process facilitates a dynamic reciprocal relationship, which facilitates the two-way exchange of information between health care professionals and patient (Feudtner, 2007). Lack of collaborative decision making has potential negative consequences for patients raising concerns and requesting further information regarding health issues, that can not only impact on a patient's satisfaction, but also feelings of empowerment to achieve health related outcomes (DiMatteo, 1998). These objectives associated with effective health care professional-patient interaction, demonstrate means by which effective communication can be achieved, as well as the impact that detracting from these objectives can have regarding compliance, understanding, satisfaction and empowerment, of the patient.

The specific components that can contribute to effective communication have also been considered and identified. These include the verbal content of a spoken message, as well as non-verbal gestures, listening, gaze and posture, and paraverbal, including tone, pitch and volume of voice (Ranjan, Kumari & Chakrawarty, 2015). Whilst credence has been given to the verbal component, equally important are the non-verbal and paraverbal components of communication, which have been identified to specifically impact patient satisfaction and adherence to clinical outcomes (Roter, Hall & Sluyter, 2006). For example, research has found that increased patient satisfaction has been associated with non-verbal actions of thephysician which elicit attention and interest, including eye contact, head nods and gestures (Hall, Harrigan & Rosenthal, 1995) thus emphasising the need to understand interaction in a holistic manner as opposed to focusing solely on the spoken content.

This is particularly important when working with clinical populations who may face challenges in articulating themselves verbally. For example, individuals suffering from speech and language disorders may have pre-existing difficulties in communicating thus adding further complexity to understanding how effective communication is achieved.

2.3 Speech and Language Therapy with Head and Neck Cancers

Between 1 and 2% of the UK's population are estimated to suffer from speech and communication difficulties (Law et al, 2007; Coles, Gillett, Murray & Turner, 2017) with around 20% of the population experiencing communication problems at one point duringtheir lives (Scottish Executive Social Research, 2007).

Speech and language therapy is concerned with the rehabilitation of communication and swallowing abilities resulting from a wide range of health-related problems including strokes, dsyphagia (swallowing difficulties), motor disorders, neurological disorders and head and neck cancers (ASLHA, 2016; Royal College of Speech Language Therapists, n.da). Within this definition, communication includes speech production and fluency, language, cognition, voice, resonance, and hearing. Swallowing includes all aspects of swallowing, including related feeding behaviours (American Speech Language Hearing Association (ASLHA), 2016). Of these health related problems, head and neck cancers (HNCs) are a predominant causal factor which have demonstrated increases in incidence rates over the past 10 years (Cancer Research UK, 2018). Head and neck cancers are a biologically diverse group of cancers that start in the upper areodigestive track, for example larynx (voice box), pharynx (throat), oral, nasal or thyroid (Argiris, Karamouvis, Rabben & Ferris, 2008). Within the UK, there has been an increase of incidence rates of HNC for males and females of 31% between 1993-1995 and 2013-2015, with a higher increase in incidence for females over males (Cancer Research UK, 2018). Though stability has been shown concerning the incidence rate across time with certain demographic groups (i.e 70-79 year olds, 80+ year olds), overall data show an overall increase across the majority of adult age groups (Cancer Research UK, 2018; Office of National Statistics, 2017).

The different forms of HNC impact individuals in both the short and long term. In the short-term patients can be impacted psychologically as well as in terms of functionality concerning swallowing and speech, which can have a profound impact on a patient's quality of life (Murphy, Ridner, Wells, & Dietrich, 2007). Early symptoms of HNC include sore throat, hoarseness, mouth ulcers or bleeding and dysphagia (Argiris, Karamouvis, Rabben & Ferris, 2008). These symptoms can often be exacerbated by the treatment approaches (Clarke, Radford, Coffey & Stuart, 2016) and longer term impacts on patients include exacerbated

problems around swallowing and speech functions, alongside other physical changes including swelling of the face and neck, changes in saliva, dry mouth, pain, changes in attention and concentration and changes to eating and drinking (Macmillian, 2017). These, in turn, impact quality of life and daily functioning, including communication. (Logeman, Pauloski, Rademaker & Calengelo, 1997). Individuals suffering from HNC have been found to experience communication difficulties including perceived quality of voice which impact their ability to socialise. This in turn has a negative effect on an individual's perceived quality of life (Happ, Roesch & Kagan, 2003).

There are currently around 17,000 practicing speech and language therapists (SLTs) in the UK working within the organisation of The Royal College of Speech & Language Therapists as of 2018 (RCSLT, n.da). SLTs provide tailored support for individuals suffering from communication disorders to improve the individual's quality of life (Royal College of Speech Language Therapists, n.da)

SLTs commonly work as part of a multi-disciplinary team (MDT) potentially comprising of dieticians, occupational therapists, physiotherapists, hygienists and restorative dentists for specific aspects and tasks, for example oral rehabilitation (Clarke, Radford, Coffey & Stuart, 2016). All members of the MDT have a role from diagnoses to post treatment care, with SLTs playing a specific role in rehabilitation of voice, speech and swallowing tests (Clarke, Radford, Coffey & Stuart, 2016). Initially, SLTs take baseline assessments of voice and swallowing functions, as well as clinical assessments comprising of oral-motor examinations, voice quality, tongue control, articulation and oropharyngeal swallow assessments as part of a pre-treatment assessment (Clarke, Radford, Coffey & Stewart, 2016). Following this, SLTs adopt a programme of pre-treatment exercises around swallowing manoeuvres and strategies in order to reduce specific impairments and reduce recovery time for patients to facilitate a more successful rehabilitation (Clarke, Radford, Coffey & Stewart, 2016). Post- treatment, SLTs are heavily involved in rehabilitation to teach specific exercises around voice, speech and swallowing, some of which include postures to reduce aspiration, diet modifications and specific therapy techniques targeted at different areas of improvement for example pitch, projection, increased articulation and intelligibility with oral restrictions and interventions targeted at specific physiological and anatomical deficits or changes (Pauloski, 2008; Clarke, Radford, Coffey & Stewart, 2016). Management post treatment also concerns medical problems that occur as a result of treatment itself, for example trismus, that occurs as a result of radiation induced fibrosis and can cause pain, difficulty with swallowing and poor

oral hygiene (Clarke, Radford, Coffey & Stewart, 2016). As such, the work of SLTs include a range of physical and practical examinations and exercises designed to improve the physical functioning of the patient designed to strengthen their ability to communicate.

As such facilitating the ability to communicate effectively is at the heart of Speech and Language Therapy (SLT) rehabilitation. The RCSLT operates from the position of inclusive communication, which is considered as encompassing "*all means of understanding and expression and all tools which enable and support communication*" (Money et al, 2016, p.20). This definition was adopted by the RCSLT following a survey identifying a lack of consensus amongst SLTs regarding the definition of inclusive communication and a need to clarify this within the profession (Money et al, 2016). In conjunction, the RCSLT (2013) outlines the five good communication standards which comprise a detailed description of how to communicate with individuals, demonstration of how communication is used to support patients with decisions about their care, the use of best approaches to support communication, creating opportunities for patients to form meaningful relationships with service providers to facilitate the want to communicate, and support for patients to express their needs.

However, whilst SLTs are specifically trained to facilitate communication with patients suffering from communicative disorders, it is argued that not all training encompasses the additional challenges that may occur during interaction and which may influence the ability to achieve the effective doctor-patient outcomes outlined by Ong et al, (1995) (Burns, Baylor, Morris, Mcnalley & Yorkston, 2012). Given the important implications this has for patient satisfaction, patient involvement in shared decision making (Pound, Duchan, Penman, Hewitt, & Parr, 2007) and patient understanding of their diagnoses and treatment (Sheldon, 2005) research to explore how this is achieved in these complex medical interactions is of significant importance.

However, with increases in medical advances, population growth and aging populations, increased demands are placed on specialist healthcare services such as specialist Speech and language therapy (Mashima & Doarn, 2008). Combined with estimated shortages of speech language therapists (Mashima & Doarn, 2008) and accessibility to health care, alternative methods of health care delivery for patients undergoing SLT are needed in order to manage these challenges.

2.4 Telemedicine: A Novel Interactional Environment

Telemedicine can be defined as the use of audio-visual information technologies to facilitate the delivery of health-care to individuals and communities where accessibility to health-care is problematic, for example due to distance (WHO, 2010). Telemedicine systems have been classified into two different types, synchronous and asynchronous forms (Craig & Petterson, 2005). Synchronous forms refer to systems which employ the use of real time transfer with individuals present for the exchanging of information, whereas asynchronous forms, also known as store and forward, refer to the exchange of information or data at different points in time, either between patients and health care professionals, or between different health care professionals, for example exchanging medical histories of patients through secure networks between General practioners (GPS) and specialists located at different sites (Rao & Lombardi, 2009). The following section is primarily concerned with the use of synchronous forms of telemedicine, to further understand and contextualise its impact on interaction, specifically considering the use of videoconferencing within different domains of medical care.

Telemedicine represents a valuable resource in order to deliver health-care to individuals and communities in remote locations (Miller, 2003). Over the past three decades, information technologies have been increasingly employed within the area of health care to further provide health services (Miller, 2007). The emergence of telemedicine is argued to have begun in the early nineteenth century, with the introduction of the telephone and the first recorded usage concerning the transfer of an electrocardiograph via telephone wires (WHO, 2010). During the 1960s, telemedicine was further implemented and utilised, primarily in the areas of military and space technology as well as with efforts and input from the public and private sector (Lovett & Bashshur, 1979; Mun & Turner, 1999; WHO, 2010). Coupled with the emergence of the internet, more possibilities were created regarding the use of telemedicine systems such as providing remote consultations through video conferencing (WHO, 2010). When video conferencing was first introduced, the infrastructure to support the delivery of healthcare was scarce and expensive which lead to a reluctance to adopt this method of delivery (Barrett & Brecht, 1998; Bashshur, 1997; Mun & Turner, 1999) An important milestone for the use of telemedicine video conferencing was its use to provide remote consultations between specialists and health care practitioners for the purposes of medical education in psychiatry (WHO, 2010). Other forms of telemedicine have since been implemented in a variety of health-

care settings and have played a significant role in the delivery of health-care for underserved or geographically isolated communities, particularly in developing countries (Wooton, Jebamani & Dow, 2005; WHO, 2010). For example, Ganapathy (2002) found that telemedicine allowed neurosurgeons to provide specialist advice on medical cases in rural India where there are a scarcity of neurosurgeons. This was achieved through using webcams and specialist phone lines to a rural village, allowing the specialist to guide the local physician in undertaking medical cases. Similarly, in the United States, telemedicine was adopted for providing care with inpatient consultations in paediatric intensive care units (Marcin, Nesbitt, Kallas, Struve, Traugott, & Dimand, 2004). The findings demonstrated that the use of telemedicine to provide quality care to individuals in rural areas was effective and considered highly satisfactory to patients (Marcin, Nesbitt, Kallas, Struve, Traugott, & Dimand, 2004). These examples demonstrate the potential of telemedicine in delivering quality health-care to rural communities. However, there are also barriers in the uptake of telemedicine technologies.

Previous literature has considered several different barriers regarding the implementation and adoption of telemedicine systems. The uptake of telemedicine systems has been perceived as not reaching its full potential, regardless of its growing use and perceived benefits (Miller, 2011; Newton, 2014). The barriers seemingly preventing telemedicine implementation and adoption identified within previous literature have concerned legal and ethical aspects which focus on issues of autonomy, informed consent and access to telemedicine services (Silverman, 2003; Stanberry, 2006; Newton, 2014), economic aspects which focus on how cost effective telemedicine is for the delivery of healthcare (for a review see Whitten et al, 2002), sustainability and concerns about patients' and healthcare professionals' satisfaction in telemedicine led services. These barriers highlight a limited understanding of the human dimensions which make telemedicine practice possible (for a review see Mair & Whitten, 2000; Lluch, 2006). In light of these barriers the general consensus amongst researchers highlight telemedicine as a viable medium for the delivery of healthcare; however, barriers for implementation and adoption limit the extent to which telemedicine is systematically rolled out into mainstream practice (Mair & Whitten, 2000).

Given the importance of good quality interactions between healthcare professionals and patients, concern about how successful interactions and relationships can be facilitated via telemedicine has been identified as a concern for both patients and professionals (Mair & Whitten, 2000; Henry, Block, Ciesla, McGowan & Vozenilek, 2016). Telemedicine is argued to present a novel interactional environment, consisting of changes in the interpersonal and

technical context that influences the communication which takes place (Miller, 2003, 2011). The novelty of the interactional environment is argued to come with a degree of anxiety and hesitancy for both patients and health care providers in familiarising themselves with this approach (Miller, 2011). Some of the unique aspects of using synchronous forms of telemedicine for health care professional- patient interaction include positioning in relation to the telemedicine equipment, reduction in personal contact due to distance as well as technical aspects such as bandwidth connection and image quality (Onor & Misan, 2005). Furthermore, a recent systematic review by Henry et al. (2016) identified the interpersonal behaviours that needed specific consideration when using telemedicine, consisting of privacy and confidentiality, reliance on visual cues, and differing communicative styles and perceptions around the utility of telemedicine. These studies by Onor & Misan (2005) and Henry et al., (2016) display the ongoing novelties of telemedicine and, specifically, the associated interactional features not present in a typical face to face consultation. Henry et al. (2016) also refer to the lack of standards regarding best practice for interpersonal communication when using telemedicine and highlight the need for education with interpersonal skills and delivery of health care using telemedicine. These points demonstrate the need for further research utilising robust methods of analysis to fully understand the complex interpersonal communication required in telemedicine interaction.

Telemedicine technologies offer an effective alternative means by which to deliver ongoing care to individuals undergoing speech and language therapy; however, the additional communicative challenges of this service, along with the need for speech and language therapy to perform physical examinations and exercises as part of it's delivery add additional complexity to understanding the interpersonal interactions observed. As such, there is an important need to understand the implications of using telemedicine technologies to deliver care to this demographic. The following section considers the existing applications of telemedicine technologies in the provision of speech and language therapy.

2.4.1 The Role of Telemedicine in Speech and Language Therapy for Head and Neck Cancer

Speech and Language Therapy draws on a variety of different communication technologies including email, telephone conversations, text messages and technologies supporting augmentative and alternative communication (RCSLT, n.d). Telemedicine encompasses additional components which allow for new possibilities, for example, the use of video-conferencing which enables therapists to observe the performance of swallow assessments remotely. Therefore, telemedicine enhances the accessibility of specialist SLT services, allowing care to be provided remotely from a variety of different venues including medical centres and rehabilitation centres, to patients' homes, local GP surgeries and speciality cancer care centres (Mashima & Doarn, 2008). Research has broadly investigated the feasibility and possibility of using telemedicine to diagnose, assess and provide treatment to individuals with communication and swallowing difficulties, across a variety of countries (Mashima & Doarn, 2008). Generally, research indicates that telehealth is a feasible and appropriate method of providing SLT to a diverse range of patients (Mashima & Doarn, 2008). However, whilst research purports favourable clinician and patient satisfaction with using telemedicine to deliver SLT (Mashima & Doarn, 2008) a number of barriers echo the broader telemedicine literature with concerns about the lack of evidence from clinical trials to further validate procedures around technical specifications, legal, educational and ethical challenges and challenges of the technology itself, i.e.- bandwidth, video and audio quality (Keck & Doarn, 2014; Mashima & Doarn, 2008; Hill & Theodoros, 2002).

Despite this, the need for ongoing care and support for HNC patients following treatment is an essential component of care packages (Clarke, Radford, Coffey & Stuart, 2016) and as such telemedicine offers an opportunity to ensure this for rural and remote patients. However, previous applications of telemedicine technologies in HNC care are more sparse (Head et al, 2011; Brink et al, 2007) and primarily utilise touch screens to monitor quality of life and symptoms of patients (de Bree et al, 2008) as well as videoconferencing to provide support and rehabilitation to patients who are geographically isolated or remote (Stalfors et al, 2001a; 2001b; Dorrian et al, 2009; Myers, 2005).

Research suggests that the use of telemedicine services may be beneficial for patients suffering from HNC with research demonstrating reduced travel costs (Balfe et al, 2016),

improvements in quality of life (Brink et al, 2007), patient education and understanding (Head et al, 2011; Stalfors, Kling-Petersen, Rydmark & Westin, 2001) and functional outcomes (Head et al, 2011). The use of telemedicine has allowed for increased monitoring and patient involvement in multi-disciplinary consultations, which are common for HNC patients (Stalfors, Björholt & Westin, 2005). Importantly, the use of telemedicine has been demonstrated not to compromise the delivery of care in comparison to face to face consultations (Ward et al, 2007; Mashima et al, 2003). However, whilst this research supports the potential application of telemedicine in HNC services little credence has been given to the interaction itself during speech and language therapy consultations.

Whilst telemedicine has a number of advantages in the provision of care, there are also challenges which occur when using the medium for specialist speech and language therapy. Specialist SLT requires ongoing physical examinations and tasks which, in face to face consultations are easily undertaken but pose challenges when the patient is consulting from a remote location. As such, achieving medical tasks in telemedicine led SLT requires consideration about how to navigate the novelties that occur with the medium without jeopardising the required outcomes of medical tasks. In addition, the nature of HNC affecting the mouth and throat naturally causes interactional barriers to verbal communication and as such the role of non-verbal cues in communication becomes heightened within a modality where physical contact and touch are prevented by the physical distance and screen of the telemedicine system. As such, there is an important need to understand how medical tasks are communicated and achieved in physical examinations, and the role that non-verbal cues play in communicating when using telemedicine videoconferencing within contexts such as this.

2.5 Methods to explore Health care Professional-Patient Interaction

As interest in interaction research has developed a range of analytic approaches have been adopted with differing focus on specific aspects of the interaction. Initially, two main approaches emerged setting the stage for further enquiry into this area. These were process analysis and microanalysis of discourse (Heritage & Maynard, 2006a).

Rooted in the work of Bales' (1950) interaction process analysis (IPA), process analysis was first utilised within a medical context by Korsch & Negrete (1972) in a series of papers set within the context of a paediatric acute care walk in clinic. At this time, limited methodologies for the scientific enquiry and quantification of communication between doctors and patients

were available (Korsch & Negrete, 1972) resulting in the works of Korsch & Negrete (1972) formulating a strong case for studying doctor-patient communication (Heritage & Maynard, 2006a). Their studies were able to display that the systematic study of health care communication was achievable and that results from these kinds of studies could influence and be significant for patient health outcomes (Heritage & Maynard, 2006b).

This approach, when first proposed, was intended as a set of guidelines and considered by the author as in their infancy (Bales, 1950). From this, researchers have adopted and expanded the coding categories of these systems tailored to the specific nature of the doctor-patient encounter to include additional aspects such as socio-emotional and task focused categories (Heritage & Maynard, 2006b). One particular approach which has been utilised extensively to investigate doctor-patient communication is the Roter Interaction Analysis System (RIAS). The RIAS is an analytic coding system utilised to categorise aspects ofhealth care professional-patient interaction (Roter, 2004). The RIAS provides a framework of categories allowing the coding of medical dialogue. Argued to be a more robust coding system (Thompson, 2001), the RIAS has been utilised extensively in a variety of different medical contexts (Roter & Larson, 2002) elucidating aspects pertaining to patients' understanding, commitment to follow up medical advice and patient satisfaction (Roter & Hall, 1992; Brown, Stewart & Ryan, 2003). Though providing impactful research regarding health care professional-patient interaction, the approach has been criticised for not attending to important aspects of content, meaning and the influence each party has on one another's behaviour in these institutional settings (Heritage & Maynard, 2006a).

Micro analytic approaches on the other hand consider different aspects of medical interaction within an ethnographic framework, including objectives, individual experiences and understandings (Heritage & Maynard, 2006a). This body of research has elucidated different aspects of medical interaction, primarily considering the mechanisms by which health-care professionals subdue and control ongoing discourse, in order to pursue differing agendas with patients during the medical encounter (Mishler, 1984; Waitzkins, 1991; Atkinson, 1995). Though micro analysis offered novel information regarding health care professional - patient interaction such as conflicting agendas between patients and health-care professionals (Heritage & Maynard, 2006a) it has been criticised for an over emphasis on the health care professional discourse in interaction, rather than being inclusive of the patient's involvement, and the interaction between the health care professional and patient (Fox, 1989; Heritage & Maynard, 2006a). Furthermore, micro analytic approaches have been criticised for not

integrating ethnographic approaches with interaction and use of language to establish meaningful implications for medical practice (Maynard, 2003; Heritage & Maynard, 2006a).

A form of analysis considered within the microanalytic approaches is that of conversation analysis. Since the early 1980s, conversation analysis has been adopted as an approach to the study of health care professional-patient interaction within a variety of different medical settings. The conversation analytic framework to health care professional-patient interaction operates from the theoretical basis that the medical interview is jointly constructed, for example between the doctor and patient whom operate on different levels of mutual understanding, authority and cooperation (Heritage & Maynard, 2006a). Conversation analysis focuses on the sequencing and design of interaction. Specifically, the features of conversation analysis concern turn taking and turn design and the sequencing of interaction between speakers. Three aspects outlined by Heritage & Maynard (2006a), which will be discussed in brief here, have been considered in doctor patient interaction and are comprised of the overall sequential organisation of medical interaction, the specific sequential structures present which achieve social actions and activities and the turns implemented in talk by individuals which comprise those sequences.

When considering the overall sequential organisation of doctor patient interaction, researchers have identified that medical consultations containing a more specific sequential structure in comparison to everyday conversation with medical consultations comprising of opening, problem presentation, examination, diagnoses, treatment and closing (Robinson, 2003; Heritage & Maynard, 2006a). Considering the overall sequential structure of doctor patient interactions allows for the deliberation of individual's understanding that are drawn upon in the joint achievement of medical tasks (Heritage & Maynard, 2006a).

The specific sequential structures or sequence organisation within doctor patient interaction concerns the organisation of turns and sequences and means by which individuals generate sense making with utterances (Heritage & Maynard, 2006b). Within doctor patient interaction, sequence organisation has been considered in regards to specific sequences of talk, including the means by which doctors can utilise their authority within the interaction to manipulate interactional sequences to achieve certain agendas, for example, through the use of perspective display sequences whereby doctors elicit the patient's description of their medical dilemma in order to prepare them for undesirable medical diagnoses (Maynard, 1991;1992). This draws on health-care professionals' authority in directing sequences during health-care interactions, for example through offering a diagnosis that is then accepted on the health-care professionals' authority (Heritage & Maynard, 2006b). Furthermore, patient responses to

doctors' authority with diagnoses elicit minimal overt acknowledgement or acceptance (Heath, 1986, 1992; Stivers, 2005).

Finally, Heritage & Maynard (2006b) refer to the use of specific turns and their design within these sequences. This line of enquiry with doctor patient interaction considers aspects of talk including doctor's question design, with research identifying questions being recipient designed and being optimised in that they favour the best case scenario or no problem responses (Stivers & Heritage, 2001). The methods by which patients and doctors present problems (Stivers, 2002; Gill & Maynard, 2006), and eliciting additional concerns from patients (Heritage, Robinson, Elliott, Beckett & Wikes, 2007) amongst other avenues of exploration (See Heritage & Maynard, 2006a; 2006b).

It can be seen therefore that Process analysis/IPA, RIAS and CA each adopt different analytic perspectives towards the classification of medical interaction, which in turn produce knowledge about specific elements of interactional processes. Here it is argued that the CA approach to studying medical interaction allows for a number of advantages: firstly, it considers the minutiae of interaction within naturally occurring interaction rather than drawing on broader coding systems, secondly, it considers both parties within medical interaction and the co-construction of this form of interaction in the institutional setting and thirdly, it adopts a systematic approach to the organisation of interaction without adopting prior theoretical assumptions with how talk operates between individuals (Heritage & Maynard, 2006a). Within the context of the current study, CA allows for examining the different interactional means by which medical tasks are achieved for individuals suffering from HNC in speech and language therapy telemedicine consultations. Furthermore, it can aid in informing how participants negotiate the interactional restrictions that occur with telemedicine videoconferencing and can explore the use of non-verbal cues to aid communication in this context. With these considerations in mind, the current research adopts the CA perspective in order to elicit the sequential aspects of health care professional-patient interaction as they unfold in naturally occurring interaction, with consideration to novel technological mediums being implemented within different medical settings.

2.5.1 Conversation Analysis

Conversation analysis (CA) can be considered as the study of the in-situ organisation of social action within everyday interactions, as well as within institutional settings which consider talk in social contexts such as work, news interviews, medicine and marriage ceremonies (Hutchby, 2005). CA allows us to uncover the tacit reasoning and underlying sociolinguistic competencies adopted by members of society, that form the production and interpretation of talk in organised sequences of interaction (Psathas, 1995; Hutchby & Wooffitt, 2005). That is to say, CA is concerned with the systematic analysis of talk produced in everyday situations of human interaction, referred to within CA as talk in interaction. Utterances within interaction can be considered as objects which are drawn upon in order to achieve things, for example a question can be drawn upon to obtain information from a recipient (Hutchby & Wooffitt, 2005). CA's exploration into interaction is concerned with naturally occurring interactions, which allows for the study of interactions as they unfold in real time using audio and/or video recordings (Hutchby, 2017). Two different forms of CA have been introduced, these being Pure CA and applied CA. Pure CA concerns the observation of ordinary, everyday interaction to produce an interactional organisation of conversation, whereas applied CA has been conceived of in two ways; the application of observations/findings from pure CA studies to investigate interaction within institutional settings, such as news interviews or medical consultations for example, or to utilise findings from CA studies in order to inform organisations regarding problems in interaction to facilitate best practice within the setting (Ten-Have, 2001).

The emergence of CA began in the 1960s with work by Harvey Sacks, Emanuel Schegloff and Gail Jefferson, as well as other early collaborators (Ten-Have, 2007). Initially, the work of Sacks and Schegloff was concerned with exploring alternative ways of exploring sociological discourse against the established paradigms in place at the time (Sacks, 1963, 1972; Schegloff, 1993). This exploration into alternative methods of exploring sociological discourse was primarily as a result of the observability of how language was actually used in interaction, rather than as invented examples that were being employed by linguistics at the time to study the formal properties of language, for example grammatical structures (Hutchby & Woofitt, 2005).

Underlying this emergence were two main perspectives which informed its development. These two main perspectives concern ethnomethodology (Garfinkel, 1967) and Erving Goffman's interactional order (Goffman, 1983). The notion of ethnomethodology is concerned with the 'observability' of social life and interaction and utilises observation to identify the means by which social activities are produced and accomplished by members of society (Garfinkel, 1967; Francis & Hester, 2004; Ten-Have, 2007). Ethnomethodology adopts the perspective that society is conceived through social activities which occur within interaction, occurring primarily due to language (Francis & Hester, 2004). It is argued that through understanding these social activities, a more thorough understanding of society can be achieved rather than adopting theoretical perspectives which detract from what occurs within social interaction (Francis & Hester, 2004).

A key assumption of ethnomethodology is that *"production of observable social activities involves the local or situated use of members' methods for doing such activities*" (Francis & Hester, 2004, pg. 20). In other words, ethnomethodology considers the means that people draw on in interaction for producing and understanding the social order in which they live (Garfinkel, 1974). This approach pertains to not imposing a sociological lens or theory onto the social world to understand it, but rather to investigate how individuals within society produce social life through the activities they are engaged in (Francis & Hester, 2004). A fundamental aspect of ethnomethodology concerns the procedural foundations of social life and the observability and accountability of activities within interaction and the means by which these can be utilised as resources for analysis (Francis & Hester, 2004; Ten-Have, 2007). The purpose of ethnomethodology is to "*access the procedural foundations of the activities of interest, their observability and accountability*" (Ten-Have, 2007, pg. 43) and transforming these for analysis. Francis & Hester (2004) outline how this is achieved in a three-step approach. Firstly, noticing an observable activity within a given setting, secondly considering how the activity within the setting is recognisable for what it is and thirdly illuminating the methods utilised in producing and recognising the activity (Francis & Hester, 2004). This approach allows for a conception of society rooted in the actual social activities that are employed by individuals within social interaction.

Ethnomethodology was initially considered to have an influential impact on the development of CA, however there is contention amongst researchers regarding CA's relationship with ethnomethodology within recent years (Ten-Have, 2007). This stems from CA being argued to have a different trajectory regarding its substance and method in

comparison to ethnomethodology, for example, CA placing more emphasis on audio and/or video recordings of naturally occurring interaction and ethnomethodology emphasising methodological approaches such as ethnography (Maynard & Clayman, 2003). This led to different positions being taken regarding the relationship between the two, including the perspective of ethnomethodological conversation analysis (EMCA). In this perspective ethnomethodology is an inherent part of the analytic process and distinguishes it from other forms of CA whereby ethnomethodology and CA deviate in their underlying principles, leading them to be at odds with one another (Ten-Have, 2007). These differences are argued to relate to current CA research striving for quantification of interaction which deviates from the phenomenological underpinnings in ethnomethodology (Ten-Have, 2007). Whilst these different positions are adopted by researchers, a consensus is still maintained regarding the important role ethnomethodology in the emergence of conversation analysis.

Developments with ethnomethodology occurred over time to encompass different approaches including sequential analysis, membership categorisation analysis and studies at work programmes (Ten-Have, 2007). These approaches differ from one another in terms of data treatment and preference of data sources, for example with membership categorisation analysis emphasising the organisation of knowledge in terms of categories (Ten-Have, 2007). Ethnomethodology allowed for a different, novel sociological approach into understanding social life, and the activities members engage in to construct their social worlds whilst emphasising naturally occurring interaction as a legitimate basis for sociological exploration.

Goffman's (1983) interaction order specifically argued for this notion; that face to face social interaction itself was a viable domain of sociological exploration and that through micro-analysis of social interactions, knowledge could be gained on how these interactions influence notions and concepts on a larger societal level, or macro level (Goffman, 1983). Goffman's interaction order also provides a typology of different, finite number of social interactions common across societies (Trevino, 2003). Goffman's work comprised of the management of unspoken norms and rituals which individuals follow in face to face interactions and their impact on the self, such as greetings as an example, rather than an individual's motives and intentions (Goffman, 1983). With this, Goffman's ideas were rooted in the notion of dramaturgy; that individuals are performing roles within social interactions and that social identities are shaped by our roles and status within face to face interactions (Goffman, 1959). In terms of its contribution to CA, Goffman's interaction order paved the way for face to face

interaction as an object for sociological enquiry, as well as introducing concepts utilised in CA including involvement, participation frameworks and participation status (Ten-Have, 2007).

As well as these two main perspectives that informed the development of CA, there are also theoretical principles/premises adopted by CA in the study of interaction. Firstly, broadly considering qualitative research approaches, CA adopts a Specimen perspective, as outlined by Alasuutari (1995) which states that what is being researched is not considered as a statement of, or a reflection of the reality being considered, but rather that it is a part of the reality itself. This point pertains to the notion of social interaction as a primordial site for investigation and exploration, with an emphasis on what occurs within the interaction itself rather than imposing external beliefs, values, and cultures onto the interaction. Secondly, from an anthropological perspective, CA adopts an Emic perspective, which encompasses the idea that meanings and descriptions are discovered when investigating a particular area and that this perspective provides an internal view of a system, rather than the Etic perspective which considers meanings and descriptions from outside a given system as being universal (Pike, 1967; Ten-Have, 2007). To summarise these aspects, CA's underpinnings allows for a method of analysis which examines social activities within interaction in order to get at the means by which social reality is produced between individuals.

Further principles within CA have been applied within its analytic perspective comprising of the sequential organisation of interaction and turn taking and turn construction in interaction. Sequence organisation is the notion that turns are organised between speakers. In other words, one speaker speaks at a time and after one another within interaction. When considering the sequential organisation of interaction, CA adopts the idea of order at all points. This emphasises the importance of studying mundane conversation in order to understand social order, in criticism of sociology's concern with 'big issues' which were consideredmore appropriate for the study of social scientific research (Sacks, 1984; Hutchby & Wooffitt, 2005). Order at all points argues that social order can be found at all points during interaction and that the activities humans are engaged in at any level can be examined to discover the way in which it is enacted and achieved (Sacks, 1984). Relating to this underlying principle stems further notions relating to the orderliness of mundane social interaction. Within interaction, individuals display understanding of a prior turn in the sequential turn, referred to as the next turn proof procedure (Hutchby & Wooffitt, 2005). The next turn proof procedure provides a means of explicating the orderly properties of talk as a collective accomplishment of participants rather than being rooted in the assumptions of the researcher (Hutchby & Wooffitt, 2005). Related to

this notion, are the ideas of adjacency pairs, conditional relevance and the property of immediate juxtaposition.

Adjacency pairs refer to sequences of talk that are comprised of two turns which occur adjacent to one another. Adjacency pairs are characterised by different speakers producing each utterance in talk, the utterances themselves occupy two turns and that they are positioned adjacent to one another (Sacks & Schegloff, 1973). Examples of adjacency pairs include question-answer, offer-acceptance/refusal, invitation-acceptance/refusal and greetings-greetings sequences. Adjacency pairs can consist of preferred and dispreferred responses. Preferred second pair parts are oriented to the first pair part of an adjacency pair, in that it orients to the structure which invites one action over an alternative action (Pomerantz, 1984). For example, agreement as a second part utterance to an invitation would be considered as a preferred action within its interactional context. However, agreement within all interactions may not be considered as a preferred section action, for example, agreement to self-deprecation would be considered as a dispreferred action (Pomerantz, 1984). Schegloff (2007) suggests dispreferred responses are characterised by different aspects including mitigation, whereby responses detract from the initial part in the adjacency pair, default responses, whereby dispreferred responses may be framed as preferred responses and positioning and elaboration, with elaboration concerning the notion that dispreferred responses are often accompanied by linguistic resources such as accounts, hedges, disclaimers and excuses. Preferred and dispreferred second pairs have important implications for the course of actions which occur in talk and how they are performed (Sacks & Schegloff, 1973; Pomerantz, 1984). This is because second parts in adjacency pairs can impact what occurs next in the interaction. As an example, a default response to a question regarding medical problems doesn't facilitate a sufficient understanding to accurately diagnose the medical issue. Second pair actions then embody and display different alignments to the action proposed and are made relevant within a first part of an adjacency pair (Schegloff, 2007). A consideration here then concerns not only the preference status in terms of the response to a first part, but also in the overall turn shape in which the actions are produced (Pomerantz, 1984).

Conditional relevance and the property of immediate juxtaposition refer to two notions with adjacency pairs. Conditional relevance is the idea that upon the production of a first pair part within conversation (for example an invitation) the second pair part is expectable (acceptance/rejection of the invitation) with its non-occurrence within the interaction being noticeably absent (Schegloff, 1972). With this, the idea of the property of immediate

juxtaposition relates to the production of the second pair part in interaction as occurring in the next position, for example the response to an invitation occurring within the next turn at talk (Schegloff, 1972). These ideas relate to the coordination and alignment of roles of speaker and hearer between individuals within interaction and how adjacency pairs construct accountable actions in response to first pair part actions (Schegloff, 1972; Hutchby & Wooffitt, 2005).

The notions previously considered are concerned with the sequential aspects of talk, a further aspect of consideration concerns rules around turn taking and turn construction. Turn taking has been identified to be comprised of principles within conversation, mainly that turn taking occurs between interlocutors, due to one individual occupying a turn in conversation at any one point with minimal overlap or gaps between interlocutors (Sacks, Schegloff & Jefferson, 1974). Turn taking within CA is comprised of turn construction units (TCU); linguistic categories such as sentences, single words and clauses and transition relevant places; places within talk that act as legitimate transitions between speakers (Sacks, et al, 1974; Hutchby & Wooffitt, 2005). Fundamentally, turn taking between speakers in interaction orients to the notion previously discussed of order at all points. With turn distribution between speakers, Sacks et al. (1974) identify certain rules at play during turns at talk. These consist of next speaker selection within a turn, self-selection and holding the communicative floor. Rules within this context is a term used loosely to refer to individuals' orientations during turns at talk and turn distribution rather than a rigid prescribed set of rules. With turn taking and distribution, the notion of repair comes into play. This refers to problems which occur in turn taking, such as overlapping talk for example, as well as aspects to do with turn design and the content of turns, for example correcting a mistake or mishearing (Hutchby & Wooffitt, 2005). These incorporate different forms of repair, consisting of a preference for self-initiated self-repair, other initiated self-repair, self-initiated other repair and other initiated other repair (See Sacks et al., 1974). To elaborate, self-initiated self-repair is the notion that a speaker who has initiated a turn repairs their own turn. Whereas other-initiated self-repair is the notion that the repair is undertaken by the speaker however this is initiated by a different individual. These different forms of repair are utilised throughout turns at talk and can pertain to a variety of different problems in talk including incorrect word selection, misunderstandings and slips of the tongue (Hutchby & Woofitt, 2005).

The aspects considered above pertaining to the theoretical underpinnings of CA, and the notions of sequencing and turn design provide some insight into the analytic framework for understanding interaction within a systematic fashion without drawing on prior theoretical

assumptions, to allow for the investigation of the systematic organisation of turns at talk within interaction. It provides a robust method of analysis when considering health care professional-patient interaction within the domain of speech language therapy, whereby communication difficulties may already be present, alongside the addition of a novel technological medium of telemedicine and the ways it may influence the interaction. In CA, specific interactional devices can be explored regarding the functions they serve within interaction. A consideration in the novel interactional environment of telemedicine concerns how health-care professionals and patients collaboratively achieve medical tasks within specific stages of consultations, for example within physical examination sequences.

2.5.2 Conversation analytic findings on physical examinations

Physical examinations have become an integral part of the medical consultation (Heath, 1986). Physical examinations entail a sequence of activity which is undertaken by the health-care professional on the patient and forms the basis of any follow up treatment or management of medical problems. In conducting physical examinations, health-care professionals rely on information from the patient regarding location, severity and progression which they then inspect and interpret in line with their medical knowledge and procedures (Heath, 2006). Furthermore, physical examinations require the co-operation of the patient in order to conduct the physical examination and also be retained when undertaking the physical examination and arriving at medical diagnoses of symptoms (Heath, 1986)

Conversation analytic research has demonstrated how interactional devices are designed and managed within physical examinations to allow for the achievement of work within a complex set of demands and responsibilities (Heath, 1986). For example, Heath (1986; 2006) has demonstrated that when initiating physical examination sequences, whilst most commonly initiated by the health-care professional, when patients describe their complaints they invite doctors to inspect the relevant part of the body (Heath, 1986). However, more commonly physical examinations are initiated through the request of the health-care professional with the patient providing permission to make themselves available for inspection (Heath, 1986).

When considering the physical examination stage in face to face medical interactions, research has examined the use of online commentary on behalf of physicians (Heritage & Stivers, 1999; Smith, Stivers, Elliott, McDonald & Heritage, 2003; Heritage,

Elliott, Stivers, Richardson & Smith, 2010). Online commentary refers to talk that describes what the health-care professional is observing, feeling or hearing during the physical examination of the patient (Heritage & Stivers, 1999). Online commentary affords the patient insight into the health-care professional's diagnostic reasoning (Heritage & Stivers, 1999). Research has identified different forms of online commentary, for example Heritage & Stivers (1999) and Smith, Stivers, Elliott, McDonald & Heritage (2003) identify two types of online commentary consisting of problem online commentary which suggests a problematic finding during the physical examination, and a no problem finding that suggests that the findings from the physical examination were not problematic and did not require treatment. Whilst no problem online commentary is predominantly adopted to reassure patients about their health status during physical examinations, it also functions as a means of resisting patient expectations concerning antibiotic prescriptions and therefore inappropriate or unnecessary antibiotic prescribing.

Conversation analysis has also recently been applied to considering how physical examinations are undertaken when telemedicine technologies are involved. Telemedicine presents additional challenges in accomplishing physical examinations. For example, Pappas & Seale (2010) examined communicative practices in the physical examination stage of televascular and telecardiology consultations when using telemedicine videoconferencing. The authors argue that within physical examination sequences, health-care professionals compensate for the lack of physical proximity by engaging in a form of collaboration whereby the specialist orchestrates the positioning of the participants and their ongoing activity through the video-link, whilst the nurse is actively involved in clarifying and evaluating symptoms. Specifically, nurses were found to make three distinct contributions to the physical examination consisting of confirming observations to eliminate doubt, reporting on the appearance of symptoms and performing minor procedures. Within this setting then, how health-care professionals perform their roles is affected and managed through the interaction.

Within health-care professional and patient interactions, the physical examination forms an integral part of the consultation (Heath, 2006; Lopriore, Lecouteur, Ekberg & Ekberg, 2018). Previous research adopting conversation analysis to understand communication during physical examination sequences has demonstrated interactional practices which facilitate the achievement of these sequences (Lopriore, Lecouteur, Ekberg & Ekberg, 2018). Previous research has emphasised communication within face to face consultations, with less emphasis being placed on the achievement of physical examinations when adopting telemedicine

technologies. With the interactional restrictions which occur due to the medium of telemedicine such as lack of physical proximity and visual access (Pappas & Seale, 2010), there is still a need to understand how health-care professionals and patients manage these and additional challenges through the interaction to facilitate the achievement of medical tasks. As previously mentioned, specific interactional devices can be explored regarding the functions they serve within sequences of talk. Within physical examination sequences, request actions become an important interactional means by which medical tasks can be initiated and achieved. As such, the CA literature exploring request making is discussed in the following section.

2.6 Requests

Requests are considered a commonplace and ubiquitous activity within social interaction and have significance in a variety of different domains, including domestic and work, and are of particular relevance for certain demographics to gain an element of control, for example with children and the elderly (Curl & Drew, 2008; Drew & Couper-Kuhlen, 2014). Requests, broadly speaking consist of asking someone to do something, be that through verbal or embodied actions (Drew & Couper-Kuhlen, 2014) i.e., *asking* for a pen vs *pointing* to a pen you require. Requesting, by its nature, is a collaborative social endeavour in that we seek the assistance of others in some form to do or achieve something. With this, requests, whether employed explicitly or implicitly, place an obligation on individuals through procuring their assistance with a given action.

Requests have also been considered to be part of a larger framework of linguistic and embodied methods through which assistance is pursued and solicited, which has been referred to as recruitment (Kendrick & Drew, 2016). Recruitment concerns an interactional outcome rather than a social action and is comprised of requests and offers and is argued to constitute a social organisational dilemma for which interlocutors have practiced solutions (Kendrick & Drew, 2014; 2016). The findings of the study demonstrate requests and offers as interactional means of 'recruiting' assistance from others when trouble is encountered in realising a course of action (Kendrick & Drew, 2014). In conjunction, the authors demonstrate requests for assistance as a form of recruitment as creating a normative obligation for another to produce an assisting action, whereas other methods such as trouble alerts through verbal or embodied means create an opportunity for another to give assistance (Kendrick & Drew, 2014). Recruitment, in essence, is concerned with providing a more holistic view of the means by which interlocutors elicit help or assistance from another, through semiotic resources of requests and offering, as well as embodied actions and anticipation of needs within interaction (Kendrick & Drew, 2016).

Requests are considered as both social and linguistic forms in that they encompass "*reciprocal connections between need and obligation, between exposure and imposition, requesting is fundamental to the management of social cohesion and social solidarity in social interaction" (*Kendrick & Drew, 2016, pg.2). The social forms of requests have been considered in regard to politeness theory which proposes that requests are a face threatening act in that it threatens an individual's freedom of action and a desire to not have one's actions

impeded by others, known as a negative face (Brown & Levinson, 1987). This has subsequently been supported by research adopting the CA perspective with the notion that requests are a dispreferred act. Politeness theory with requests then considers the social dimensions which underpin the choice of one linguistic form over another (Drew & Couper-Kuhlen, 2014). Though politeness theory was considered as an important facet for understanding the social forms of utterances, it has also been criticised for the use of utterances devoid of taking place within an interactional context, and thus lacking empirical validity (Drew & Couper-Kuhlen, 2014). In line with this, Watts (2003) demonstrated that the structure of requests within social interaction can have different implications regarding politeness in that there is a variety of ways in which politeness can be evaluated and can be considered within day to day interaction and how it can also be culturally and historically variable, introducing a distinction between politeness and impoliteness (Watts, 2003).

In regard to the linguistic form which requests take, they are considered as directives, that is, part of a group of action verbs including invitations, pleas, commands and requests (Searle, 1975) which was then elaborated on as a group of grammatical constructions encompassing imperative (instructional), declarative (providing information) and interrogative (questioning) request forms (Drew & Couper-Kuhlen, 2014). Within the linguistic forms that requests take, there are grammatical forms and prosodic resources that characterise requests. For example, 'would you/could you' or 'I wonder if you'd be able to' as interrogative request formats, declarative request utterances such as naming the object being requested or alternatively more indirect interrogative forms such as are you using that? (Curl & Drew, 2008; Drew & Couper-Kuhlen, 2014). These different request formats allude to the different means by which requests can be achieved within interaction and the degree of directness which is employed by the request itself.

Within a conversation analytic framework, requests are considered as an adjacency pair (request-response) with research placing an emphasis on responses to requests in eliciting acceptance and granting action (Kendrick & Drew, 2016). A number of studies utilising conversation analysis have proposed principles regarding the selection of a specific request form.

The first principle concerns the sequential placement of requests, informed by Wooton (2005) who examined the selection of a five year old child's request in a longitudinal study demonstrating the child having an awareness and a sensitivity to the current sequence of talk and prior sequences leading up to the request itself. This study also demonstrated that 'can you'

requests had an interactional function of demonstrating an expectation of what is being requested as departing from a course of action being projected by the recipient (Wooton, 2005).

A second principle associated with requests concerns entitlement to make the request Lindstrom (2005) considered the different linguistic forms used with requests by senior citizens in a Swedish care home and their relevance to entitlement. That is, the entitlement of a speaker to make a request of a hearer. This study observed that the use of imperative request formations (instructional utterances) displayed an entitlement to make the request, whereas the use of interrogative formations (questioning utterances) displayed a lack of entitlement to make the request (Lindstrom, 2005). The senior citizens within the study adopted requested formats which presented the requested action as legitimate within the institutional context of care giving which thus displayed a higher entitlement to the requested action (Lindstrom, 2005). This has been further supported by research by Craven & Potter (2010) who found that the use of these forms portray compliance and limit the number of responses to the request itself. They argue that requests have built into them the relevance of acceptance, orienting to the recipient's capacities and desires (Craven & Potter, 2010). This has implications for interaction in medical interaction in what can and cannot be granted in response to the request.

The final principle with requesting concerns contingencies in fulfilling requested actions, which considers the elements that could compromise the achievement of a request. Curl & Drew (2008) demonstrate the importance of request form in facilitating contingency whereby they examine the use of different request formats between telephone calls between family and friends and an out of hours GP service. The different ways of formatting requests with "I wonder if.." or "would/could you.." and use of modal verbs display the speakers understanding of the contingencies concerned with the granting of the request on behalf of the recipient (Curl & Drew, 2008). For example, a patient's request constructed as "I was wondering if it was possible to see him one day next week" (Curl & Drew, 2008) displays the contingency that the health-care professional may not be available to see the patient that week.

Formats of responding to requests have also been investigated within the CA literature. Ruanuimaa & Keisanen (2012) examined formats of responding to requests during every-day face to face interactions. The findings showed two formats in which individuals responded through either a one-part response of the fulfilment of the request or a two-part response consisting of acceptance followed by the fulfilment of the request. These formats were demonstrated as ways of favourably responding to requests with each format having different implications. For example, the two-part response consisting of the initial acceptance implies

that the fulfilment of the request will follow, with the initial acceptance being vocalised through affirmative tokens including ‘okay’ or ‘yeah’ or alternatively through embodied actions such as nodding or gestures such as thumbs up. The initial acceptance to the requested action was also found in cases to be elaborated on with further conformation, further demonstrating the orientation to fulfilling the requested action. Alternatively, one part responses consisted of directly carrying out the requested action either through verbal means such as responding to a question or embodied means such as handing over an object. One part responses of fulfilment implied ease and immediacy in fulfilling the requested action with participants displaying their mutual orientation to the fulfilment of the request as being rooted within that current situation (Ruanuimaa & Keisanen, 2012). The authors also note that embodied actions are relied upon during responses to requests displaying the mutual orientation of participants to ongoing activities when dealing with concrete objects. Furthermore, the authors argue that within co-present interactions, embodied actions play an essential role with the formation of request sequences. This raises interesting questions about whether formats of responding to requests are similar during interactions where individuals are not co-present, relying on a medium to facilitate interaction such as videoconferencing which encompasses its own interactional restrictions in the fulfilment of actions. Differences could include the role and emphasis in embodied actions with requests in displaying mutual orientation given the restricted view available when using videoconferencing.

A further consideration regarding responding to and fulfilling requests also concerns the point at which they are fulfilled. Traditionally requests have been considered as an adjacency pair with fulfilment to the request occurring in the following turn (Lee, 2009). However, research from Lee (2009) has demonstrated how requests can be extended in interaction. This is to say that rather than being immediately fulfilled in the following turn, what is being requested is constructed over a sequence of talk and is therefore sequentially produced over an extended sequence (Lee, 2009). To elaborate, the initial request within the extended sequence sets up what is to be fulfilled in the following turns at talk and the fulfilment of the request is then unpacked and fulfilled primarily by the recipient rather than the requester however both parties collaboratively construct and unpack what is being requested in order to facilitate its fulfilment. This was demonstrated in telephone calls to an airline service, whereby callers and agents accomplish the action (for example of booking a customer’s flight) components of requesting over an extended sequence of talk which is collaboratively constructed by the participants (Lee, 2009). During these sequences, airline service agents were required to direct the interaction with customers as the agents had more knowledge of the

contingencies and components in processing customers' requests (Lee, 2009). For example, through establishing the location and time in which customers wanted to travel and whether flight seats were available. Within this institutional context and the asymmetry in knowledge between agents and customers in specifying components of the requests, agents directing courses of action to fulfil requests was an essential component (Lee, 2009). What extended requests amount to is an outcome which brings into alignment what the requester seeks into agreement with what the recipient can grant, whereby both parties process particular components over an extended sequence to achieve the fulfilment of the request (Lee, 2009). Given the institutional setting of this study examining extended request during telephone calls, a point of interest concerns at what point extended requests are fulfilled within different institutional settings. Specifically, settings which rely on different mediums to facilitate the interaction, for example videoconferencing which may pose additional barriers. With this, extended request sequences may encompass additional problems which delay the fulfilment of medical tasks and impact on the interaction and achievement of medical tasks. With this, there is a need to understand extended requests with video conferencing and how they are sequenced and collaboratively constructed and fulfilled and whether this occurs in a similar fashion.

With these considerations, requests are argued to be fundamental to cooperation, collaboration and social cohesion amongst interlocutors in social interaction (Curl & Drew, 2008; Kendrick & Drew, 2016). Understanding the design, sequencing and function of requests within speech language therapy telemedicine consultations is important in aiding understanding on their relevance in eliciting action and achieving medical tasks. Given that requests are fundamental to collaboration, requesting may be an effective means by which to achieve medical tasks. This is particularly relevant when considering requests as a means of eliciting the assistance given the need for the remote specialist to involve others in their request to achieve these medical tasks in telemedicine consultations.

Drew and Couper-Kuhlen (2014) argue that within ordinary social interaction, individuals routinely construct requests in indirect ways. One means by which this isachieved is through the use of embodied actions with requests, for example gestures such as pointing and direction of gaze and body position. Again, this may have particular relevance within a speech and language consultation where individuals are potentially limited in their verbal communication and as such may make more use of embodied actions to aid communication.

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2.7 Embodied Interaction and Multimodality

During conversations, individuals draw on different bodily actions such as gestures, pointing, gaze changes and re-orienting their bodies in order to achieve things, for example obtaining a pen from someone by pointing at it, or gesturing writing when requesting a pen. These bodily actions are referred to as embodied actions. When considering the role of embodied actions within human interaction, one must acknowledge that individuals draw on multiple semiotic resources with different properties in order to elicit social action (Streek, Goodwin & Lebaron, 2011). That is to say that, within ordinary every day conversations, as well as institutional settings, individuals routinely draw on embodied displays/actions with verbal utterances in order to elicit action. For example, individuals use their bodies, as well as gaze, to mutually orient to one another within turns at talk, referring to what Goffman (1964) terms the Ecological huddle; the notion that visual embodied actions/practices are utilised to publicly demonstrate to interlocutors the mutual orientation towards places, people and objects within the environment (Streek, Goodwin & Lebaron, 2011). Goodwin (2000) argues that both talk, and gestures can encompass or construe and restrict entities within a participant's environment, and that different material objects within the environment can elicit particular kinds of action within talk that would otherwise not have been possible (Goodwin, 2000). Embodied actions, then, form part of larger sequences of turns at talk, and gain their power as social action through their sequential placement within a strip of talk (Goodwin, 2000). For example, asking for a pen whilst simultaneously pointing to a pen demonstrates to the recipient the location of the object being requested, showing how the act of pointing is sequenced with the request for the pen. The term multimodality, encompasses this notion of the simultaneous use of diverse semiotic resources within human interaction in order to elicit social action and has been argued to be a pervasive feature in the organisation of human/social action (Streek, Goodwin & Lebaron, 2011).

Previous research considering the role of embodied actions within human interaction has adopted slightly different perspectives over time. A pervasive feature within early research on embodied actions concerns the focus on specific forms of semiotic resources with language, rather than a holistic approach to the diverse use of semiotic resources which are drawn on by individuals (Streek et al. 2011). Furthermore, Goodwin (2009) argues that much analysis conducted with language is concerned with the phenomena of speech itself. This consists of linguistic formulations, aspects of prosody as well as turn constructional units and design which

underemphasises the role of embodied actions within human interaction, and how individuals modify utterances within turns at talk based on what they observe recipients/hearers doing within turns at talk (Goodwin, 2009). Debate occurred during the 1970s regarding this issue of the distinction between verbal and non-verbal behaviour (Kendon, 1977; Mead, 1975). Mead's (1909;1934) research considering individualism and interaction posited that interaction was constructed through gestures, considered as components or acts of interaction which can be identified as units in themselves, and which are embedded within the social acts they emerge in (Streek et al., 2011). From this, research further considered how we conceptualise speech and non-verbal communication, with Bateson (1956) positing that these aspects did not operate as a combination of sign systems, but rather as a mediator between act and context, with emphasis on contexts framing behaviour (Bateson, 1956; Streek et al., 2011). CA as an analytic approach, built on this research through consideration of the functions of embodied actions within talk in conjunction with verbal utterances. Following the emergence of videotaping within the 1980s, CA research explored the role of different embodied actions within interaction, considering different aspects of embodied actions such as eye gaze, hand gestures, embodied actions and the environment and coordination of multimodal action (Streek et al., 2011). Research by Goodwin (1979;1980) considered the role of eye gaze during family meals, specifically examining shifts in eye gaze during a single sentence which was reconstructed dependant on who the gaze was fixated towards, and how this related to different knowledge states of individuals (Goodwin, 1979; Streek et al., 2011). Goodwin (1980) also demonstrated the role of eye gaze as a subtle coordination with utterance restarts to display attention towards speakers. Atkinson (1984) demonstrated the role of eye gaze and shifting gaze using videotaped political speeches, demonstrating its function in eliciting applause from the audience when combining talk and a shift in gaze towards the audience (Atkinson 1984). Research considering gestures broadly considered these as the ways in which the body is implemented when talking (Kendon, 1981). This notion was further reinforced by Goodwin & Goodwin (1986) in that gestures were coordinated with talk, subsequently forming a whole. Specifically, regarding hand gestures, research has demonstrated how hand gestures with objects are recognisable and understood through the material world in which they are implemented (Goodwin, 1997; Heath & Hindmarsh, 2000). Whilst these aspects demonstrate that gestures are "environmentally coupled" with communicative acts, it is proposed that that gestures also influence perception of the environment (Goodwin, 2007 pg. 195). This has been demonstrated through Goodwin's (2007) research considering archaeologists excavating a prehistoric site, as well as through Haviland's (2000) research examining farmers' pointing gestures and their precision in

formulating a mental map which was interactively constructed. In essence, this relationship between gesture and the environment has been considered as one in which gestures have been understood as organising social interaction and acting as a basis for shared knowledge and understanding as well as influencing individuals' cognition (Streek et al., 2011; Lebaron & Streek, 2000; Koschmann & Lebaron, 2002).

Embodied actions can therefore be considered as multimodal. Multimodality within CA refers to the different resources employed in organising action by participants, taking into account how the different resources are intertwined, for example gesture, prosody, grammar, gaze and body postures. (Mondada, 2014a). With the coordination of multimodal interaction, Deppermann & Schmitt (2007) consider this as the study of coordination and self-organisation, pertaining to the ways in which single participants formulate bodily actions and interactional organisation and how multiple participants coordinate bodily actions (Streek et al., 2011; Deppermann & Schmitt, 2007). Both have relevance to different situations, for example self-organisation has been shown in surgical theatres utilising videoconferencing, as surgeons perform precise embodied actions whilst relaying information to an audience, demonstrating how the surgeon organises their own actions within larger sequences of interaction (Mondada, 2014b). Whereas interactional organisation has been demonstrated through research considering the use of facial expressions with verbal utterances when assessing stories and topics which demonstrate how these expressions are coordinated with verbal utterances over a sequence of talk (Ruusuvouri & Perakyla, 2009).

A distinction can be observed in the coordination between participants in regards to their bodies within interaction, referred to as direct coordination, or to the setting in which the interaction takes place, referred to as coordination via objects. For example, orienting your body as a new speaker being selected in talk (direct coordination) or turning your body to a glass of water following a turn at talk (coordination via objects) (Krafft & Dausendschon-Gay, 2007; Streek et al., 2011). These aspects underpin research into embodied actions and the multimodal nature of talk in interaction, which opened up an avenue of exploration into the role of embodied actions and their multimodal nature within institutional settings. Research within different institutional settings such as Police interrogations (Lebaron & Streek, 1997), Surgeries (Mondada, 2007) and medical consultations (Heath, 2002;2006) have elucidated different functions of embodied actions, such as their role within physical environments and how individuals appropriate the material environment with embodied actions which is subsequently formulated through talk (Lebaron & Streek, 1997) or how gestures can be utilised to reveal emotional and personal experiences (Heath, 2002).

Furthermore, research has also been conducted with consideration to embodied actions through or with technologies, including visual mediated interactions through technology such as videoconferencing (Pappas & Seale, 2009;2010, Heath & Luff, 1992; Mondada, 2007). This research has revealed the functions of embodied actions within video mediated interaction, as well as the interactional asymmetries which may arise in interpersonal communication (Heath & Luff, 1992). Within video mediated interaction, individuals' embodied actions are embedded in the environment (Luff et al, 2010) creating certain interactional asymmetries which are not present in face to face interactions. An example of these concerns asymmetries between participation and environments in which actions are produced and environments in which actions are received as a result of the separation in distance (Heath & Luff, 1992). When using video mediated interaction, the introduction of the camera and monitor transform the environment in conducting actions, which results in difficulties for individuals in producing and co-ordinating social actions and activities (Heath & Luff, 1992). With this, research has argued the continuing need to understand the role of embodied actions within technologically mediated interactional settings (Miller, 2011).

To summarize, the research listed concerning embodied actions has elucidated the underlying principles of embodied actions, their multimodal nature within interaction and simultaneous use with language, as well as demonstrating the different institutional settings in which embodied actions have been considered. This body of literature elucidates the range of interactional resources which individuals draw on during talk. Considering the ways in which embodied actions are employed during talk, allows for a detailed understanding of human activity and action within mundane settings, as well as institutional settings (Streek, Goodwin & Lebaron, 2011). From this, further consideration will be given to the current understanding of embodied actions within the institutional setting of medical interactions and the more novel interactional setting of telemedicine, considering the function that embodied actions play in eliciting action with participants.

2.8 Embodied Actions in Medical Interaction

Embodied actions have been considered within different medical institutional settings, including medical consultations (Heath, 2002; Maynard & Heritage, 2005; Robinson & Stivers, 2001), Surgeries (Mondada, 2007) and other health related settings including preoperative anaesthesia teams (Hindmarsh & Pilnick, 2007). A comprehensive overview of roles of

embodied actions within health care interactions is provided by Christian Heath (1986) who outlines research concerning the use of embodied actions within medical consultations and more specifically within different sequences of consultations, i.e. opening, history taking, physical examination and closing sequences. Broadly, the work by Heath (1986) eludes to the interactional functions of different forms of embodied actions and their role in the achievement of medical actions/agendas. For example, through the use of gaze changes with verbal utterances to maintain participation and involvement of other interlocutors, or to indicate next speaker selection. This can also be achieved through body movements to elicit a desired response, such as gestures, particularly when a relevant action is absent within the interaction (Heath, 1986). Further research has focused on the role of gaze in constituting a display of attention within turns at talk (Russuvouri, 2001; Heath, 1986; Robinson, 1998). Gaze within medical interaction has been identified as a useful tool in negotiating the change or termination of engagement frameworks; a space where individuals' long term actions are focused within turns at talk (Goodwin, 1981; Schegloff, 1987; Kendon, 1990; Robinson, 1998). For example, Savenstedt, Zingmark, Hyden & Brulin (2005) examined the function of eye gaze with elderly individuals using telemedicine in a nursing home. The study found that eye gaze functioned to establish joint attention with the elderly individuals which was maintained during sequences of talk indicating an understanding that because the gaze was directed at the individual they had the attention of the nurse (Savenstedt et al, 2005). Gaze and body position when using videoconferencing in this setting created joint attention during the interaction consisting of both the elderly participants and the nurses directing their gaze at the screen as if they were looking directly at each other (Savenstedt et al, 2005).

Further research conducted by Heath concerns the exploration of the expression of suffering through embodied actions within medical consultations (Heath, 1989; 2002). Within the study, patients were found to use different forms of gesture and bodily conduct to render the experiences as visible to the doctor (Heath, 2002). For example, a patient suffering from a headache through her embodied actions of raising her hands to her head reveals visually to the doctor aspects of the pain including the specific location as well as the extent of the pain (Heath, 2002). Through embodied actions such as these patients are able to display distinct qualities of the symptoms which patients portray in their verbal conduct (Heath, 2002).

Embodied actions within medical consultations have also been found to function as a means of transitioning between activities/sequences of history taking and the physical examination (Robinson & Stivers, 2001). The findings of the study demonstrate a number of

theoretical and interactional implications with how embodied actions are used in this way. Firstly, that physicians within medical consultations produce non-verbal behaviours prior to overt verbal utterances of requests, instructions and explanations as a means of projecting a shift from history taking to the physical examination stage of the consultation (Robinson & Stivers, 2001). Secondly, that patients collaboratively achieve these transitions through responding to the physician's nonverbal behaviours with their own non-verbal behaviours, for example getting into position for a forthcoming examination (Robinson & Stivers, 2001). This not only supports prior research demonstrating that patients observe physicians' nonverbal behaviours in order to determine and appropriately respond to the form of participation in which they are engaged (Heath, 1986) but also demonstrates that these non-verbal behaviours occur before the completion of the verbal utterance and transition to the new activity (Robinson & Stivers, 2001).

With the introduction of videoconferencing in medical interaction, individuals embed their embodied actions in the local environment in which the interaction takes place (Luff et al, 2010). Mondada (2003) examined surgeons' use of telemedicine equipment to link with an audience of advanced trainees observing an operation as well as an expert providing advice. The study demonstrates how surgeons accomplished their actions in a manner that was recipient designed for the observers, allowing visibility for the ongoing course of action (Mondada, 2003). Similarly, research by Pappas & Seale (2009) examined how patients and health-care professionals negotiate their positioning in telecardiology and televascular consultations. The study demonstrates how patients lack situational knowledge of where to physically position themselves in relation to the telemedicine videoconferencing equipment, which is negotiated between the patient and health-care professional. Alongside this, the study found that patients sought clarification that their positioning was correct and that the consultant had visual access to the patient (Pappas & Seale, 2010). Further research by Pappas & Seale (2010) which examined physical examination sequences with telemedicine videoconferencing found embodied actions were oriented to the videoconferencing equipment, with nurses re-positioning cameras in order to facilitate visual access for the physician in examining different parts of the body. What these studies emphasise is that when using videoconferencing embodied actions are relied upon in order to overcome trouble in achieving medically related tasks whilst participants orient to the equipment itself to allow visual access to ongoing courses of action. This also starts to highlight the role of the supporting individual (ie., the nurse on the side of the patient) and how their embodied actions support the achievement of tasks on the side of the remote specialist.

The consideration of the sequential structure of embodied actions with verbal utterances within this institutional setting demonstrates the functions of different semiotic resources in eliciting action for recipients. Allowing for the achievement of medical tasks between doctors and patients within this institutional setting. As medical interaction changes with the emergence of telemedicine, there is an important need to understand the role embodied actions play within this novel interactional setting (Miller, 2001). In conjunction, there is a need to understand the function that embodied actions play in achieving medical tasks when using telemedicine videoconferencing for a demographic of individuals where pre-existing communication problems are present and how these tasks are negotiated between the different members present.

2.9 Statement of Research Questions

The following study drew on telemedicine consultations in speech language therapy for head and neck cancer patients across mid and south Wales. Head and neck cancers were documented as the eighth most prevalent cancer in the UK and saw the largest significant increase over the ten years alongside melanoma, breast, liver, and urinary tract (Welsh Cancer Intelligence and Surveillance Unit, 2017). With these increases in incidence rates, an important aspect of consideration is the ability to provide specialist care within rural locations where access to care is limited. A potential solution to this concern comes from telemedicine technologies and their ability to provide care to individuals in remote geographical locations. However, previous research has demonstrated a limited research base exploring how this medium influences the interaction between patients and health-care professionals. Henry et al, (2016) argue clinicians are still managing and tailoring interpersonal attributes within telemedicine consultations to achieve effective communication, establish therapeutic rapport and provide quality care to patients at distant sites. In becoming familiar with this mode of care delivery, varying degrees of uncertainty may be present in terms of how both health-care professionals and patients should behave, potentially resulting in hesitancy and anxiety towards the mode of care delivery (Miller, 2011). This could in turn contribute to the failure of telemedicine normalising within areas of health-care.

The aim of the current project was to consider how health care professionals and patients manage interaction in speech language therapy telemedicine consultations. It is common place within qualitative psychological research to approach a given data set with a predefined research question generally rooted in previous literature. Unlike other qualitative approaches to interaction, however, CA adopts a stage within the research process referred to as unmotivated looking (Psathas, 1990). This stage encompasses being open to the discovery of new phenomena from a dataset rather than looking for instances of predefined phenomena or operating from a preconceived idea of what the phenomena should look like (Psathas, 1990). Approaching a dataset in this way enables the 'noticing' of features of talk which initially may be unremarkable, but through analysis display features of the talk which serve as practices facilitating social action (Schegloff, 1996). (see 3.4- identification of phenomena for more information)

From the process of unmotivated looking, the focus of this analysis relates to how medical tasks are achieved as collaborative endeavours through extended requests and the embodied actions that occur during the sequences within physical examinations when using telemedicine videoconferencing. The achievement of medical tasks in speech and language therapy is of particular relevance in that medical tasks work towards aiding in the rehabilitation of communicative problems. Given that this involves a number of people (i.e., specialist, patient and support therapist) particular interest is shown to how these medical tasks are requested and fulfilled with consideration to the different members. The challenging role of verbal communication has also highlighted interest to consider the role that embodies actions have in making and fulfilling these requests.

From the process of unmotivated looking and collating instances of extended request sequences from the data, the following research questions were then devised;

1. How are extended requests designed and responded to in physical examination sequences to facilitate the fulfilment of medical tasks in specialist speech and language therapy delivered via telemedicine?
    a. How are requests for physical examinations designed and negotiated between the participants in achieving medical tasks?
    b. How do participants respond to and fulfil request sequences in the achievement of medical tasks?
    c. How are embodied actions used to facilitate understanding between participants in the achievement of medical tasks?

3 STUDY DESIGN AND METHODOLOGY

3.1 Methodological Context

3.1.1 Setting

The research was carried out within a Macmillan telemedicine speech language therapy service for head and neck cancer patients. The main telemedicine provider for specialist speech language therapy was a hospital located in South Wales which conducted monthly consultations with patients from across South and Mid Wales. From this site, telemedicine links were established to 5 hospitals across rural locations in Mid Wales. The consultations used telemedicine videoconferencing equipment enabling patients to attend their local hospital to access their specialist speech language therapist based at the main specialist hospital site. The videoconferencing equipment was mobile, allowing it to be manoeuvred around the room. This videoconferencing equipment allowed the individuals present in the consultations to visually see and hear one another. The equipment also allowed health care professionals on both ends basic functions such as adjusting volume levels and zooming in and out. The health-care professionals had familiarity in using the equipment and the functions allowed them to optimise the quality of the videoconferencing equipment for the consultation. At the patient side, patients were always accompanied by a general speech language therapist. Within 6/16 consultations, a dietician was also present. During 7/16 of the consultations, a friend or family member accompanied the patient.

The following section provides an overview of the setup of the speech language therapy consultations with consideration to how the consultations were structured.

The consultations focused on the monitoring of patients' progression and rehabilitation following head and neck cancer treatments. Figures 3.1 and 3.2 below show the layout in which the interaction takes place, with the specialist speech language therapist (SSLT) located at the main telemedicine site, and the patient (P) located with the multidisciplinary team consisting of the general speech language therapist (GSLT) and dietician (D) (though not present in all consultations) at a connecting site.

Data collection started in July 2016 and occurred until the 7th of January 2017, where the last consultation session was recorded. Two cameras were set up prior to each consultation with the SSLT and used to record the telemedicine consultations. This was done if participants

provided consent for the consultation to be recorded before the consultation began. The cameras were located at a single site with the SSLT and positioned on tripods, remaining in the same position during the consultations. One camera was directed towards the SSLT whilst the other was directed towards the telemedicine videoconferencing equipment. Through positioning the cameras this way, we were able to obtain video footage of the nonverbal behaviours accompanying the verbal utterances of both patients and health care professionals allowing the consideration of both of these aspects for analysis. To minimise any impact of the recording equipment on participants, efforts were made to position the cameras out of sight of the health-care professionals and patients during the videoconferencing session. Data was collected from the specialist SLT at the main telemedicine site on a bi- monthly basis and was then subjected to transcription and analysis. The figures below display the orientation and positioning of the cameras in relation to the telemedicine videoconferencing equipment. Though there was variation in the setup across the hospitals, particularly on the end of the patient, GSLT and dietician, the figures demonstrate an example of the setup to facilitate understanding of the general setup.

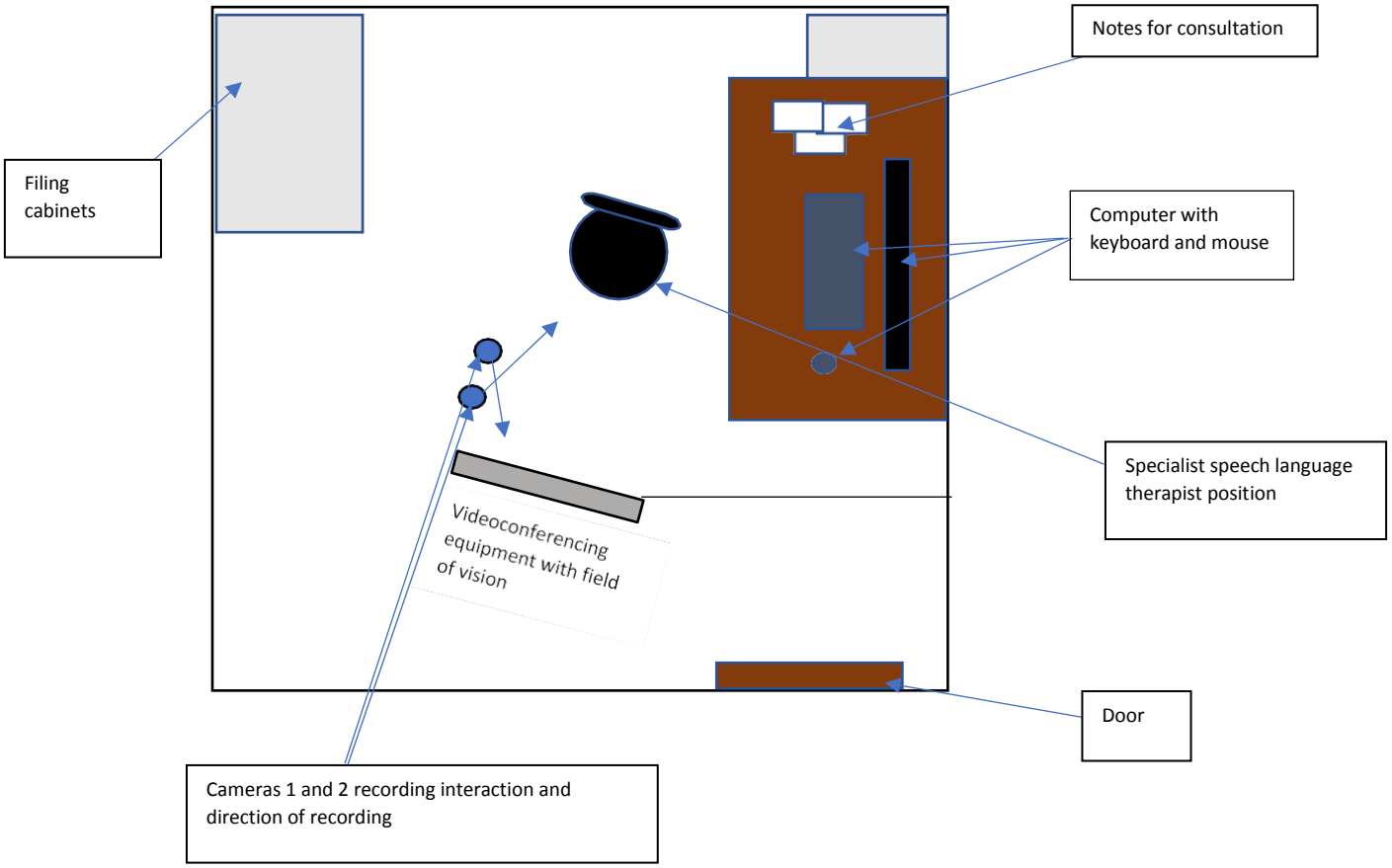

Figure 3.1 Layout of room with specialist speech language therapist

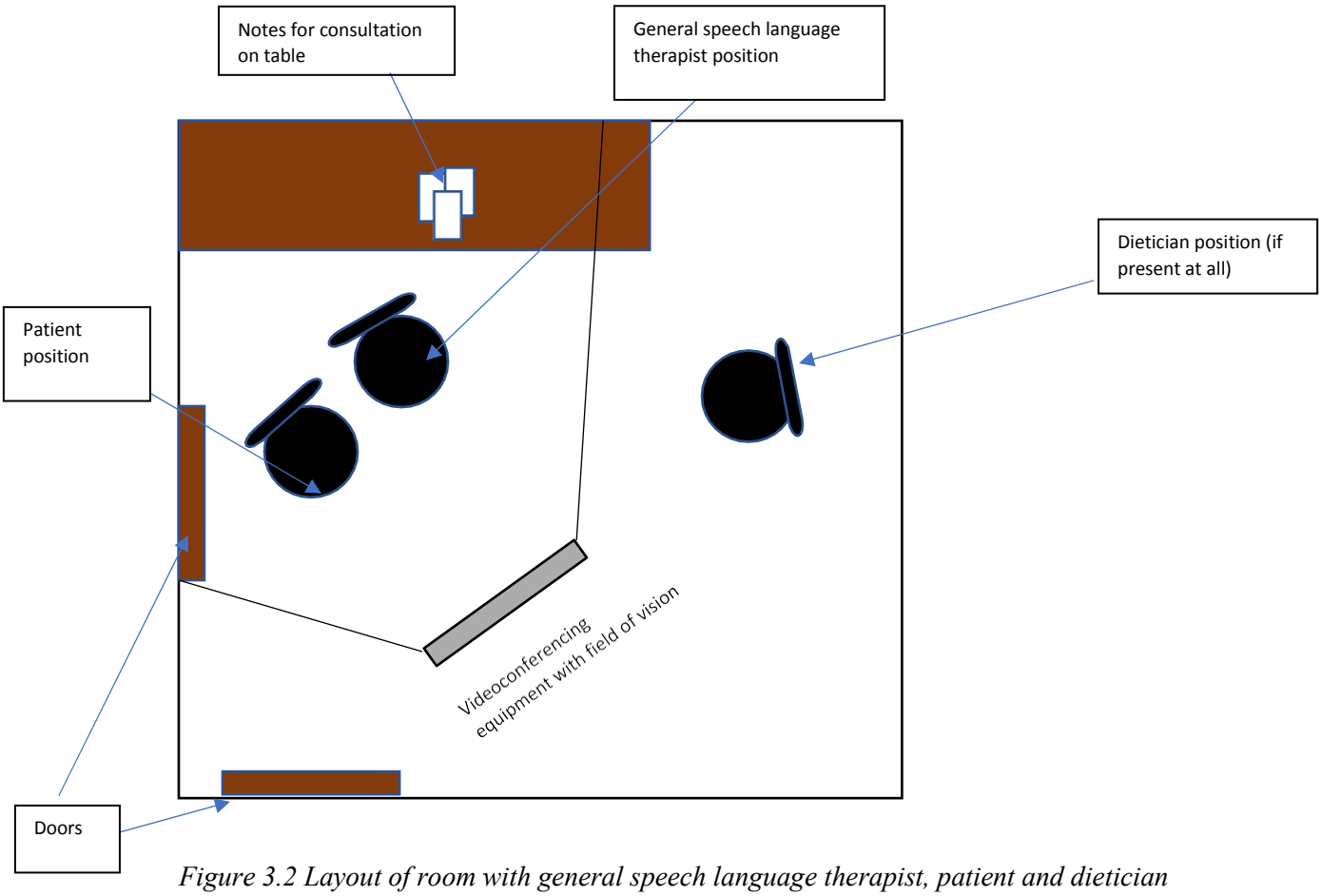

Figure 3.2 Layout of room with general speech language therapist, patient and dietician

Each location was equipped with the telemedicine videoconferencing equipment as well as equipment and notes relevant to the consultation located on the table. The SSLT is additionally equipped with a computer utilised within the consultations to refer to the patient's history as well as necessary details relevant within the interaction.

3.1.2 Participants and Data

Data consisted of 16 naturally occurring consultations spanning 8 hours and 58 minutes of data with 4 patients taking part in more than one consultation. Consultations ranged in duration from 14 mins 52 seconds to 58 mins 35 seconds. One consultation was removed from the data set due to the severity of the patient's speech difficulties, which resulted in problems accurately transcribing the interaction.

Participants were first approached by the SSLT and informed about the study prior to one of their scheduled telemedicine consultations. Patients were invited to take part in the

research through the NHS based on them being part of an existing telemedicine service for speech language therapy. The inclusion criteria within the study included that participants were aged 18 or over, were English Speaking and undergoing speech language therapy for head and neck cancer. Participants also had to have cognitive capacity to consent to taking part in the research. Exclusion criteria included if participants were under the age of 18 or lacked cognitive capacity to consent to the research. Twelve patients (8 male, 4 female) and 6 Health care professionals (3 GSLTs, 2 dieticians and 1 SSLT) consented to take part in the study.

3.2 Procedure

Patients within the study were first invited to take part through a pre-existing telemedicine consultation service provided for speech language therapy. Patients were first approached by the specialist Speech language therapist (SSLT) based at the main telemedicine provider site who informed patients of the research. Patients expressing interest in the research were then sent an invitation pack containing an information sheet, invitation sheet and consent form. All personal details of the patients were held by the SSLT during this time. At this stage patients were provided with the opportunity to ask the SSLT or researchers any questions regarding the research. Given the nature of the study, patients were also informed of the layers of consent available to them which provided clarity about the use and dissemination of the data within the project (see section 3.2.1 for more information). Similarly, GSLTs and dieticians taking part in the consultations were also provided with tailored information sheets and consent forms, detailing the nature of the study which was provided by the SSLT. Following written consent being received by both patients and health-care professionals involved within the consultations, recording of scheduled telemedicine consultations went ahead. Recording of the consultations was conducted by the specialist speech language therapist, who received training in operating and positioning the cameras prior to data collection. This was implemented as a means to further protect participants' confidentiality as well to reduce any possible impact of researcher influence on the consultations.

3.2.1 Access, Ethics and Informed Consent

Ethical considerations for the research were conducted in line with the British Psychological Society (BPS) (2009) code of ethics and the research was reviewed and approved by the NHS Research Ethics Committee and NHS management permission for research and development (June 2016).

All participants, consisting of both patients and health-care professionals provided informed consent before taking part in the study and were not required to take part in any additional tasks outside of their regular consultations. This was as a result of the studies methodological approach being concerned with the naturally occurring interaction within these consultations. Prior to each consultation starting, participants were asked if they were happy with the consultation being recorded. This was repeated at the end of the each consultation to establish if patients were happy for their data to be used given that certain issues can arise during consultations which patients may not want included with the data. Patients not providing consent for the consultation to be recorded were not impacted and their scheduled consultation continued as normal.

The first level of consent sought confirmation that they understood that: their involvement in the study was voluntary, they had the right to withdraw at any point up until completion of the project, their decision about whether or not to engage in the research had no impact on their medical care, and the use of their data, consisting of audio and video files within the study for the purpose of analysis. In order to take part in the study, it was essential for participants to consent to all parts of this section.

The second level of consent was optional and participants could choose to 'not consent' to certain uses of their data, but still be eligible to participate in the research (see appendix A for consent patient and health-care professional consent form). This section concerned the use of the audio and visual recordings in the dissemination of the analysis and results for the purposes of teaching and conferences. Participants were informed through the information sheet that though all measures were taken to maintain confidentiality and anonymity through the use of pseudonyms, and editing the video and audio files where possible, this could not be guaranteed with the use of recordings within the dissemination stage. Any identifiable information within the video recordings which compromised the participant's confidentiality and anonymity were removed or edited through altering the frequency of the audio file and altering the colour and pixilation of images.

In order to account for this, the layers of consent were implemented to provide clarity to participants during the recruitment process and obtain explicit permission from participants for their data to be used this way. Further ethical measures were adopted during the data collection to further protect participants' confidentiality. These included ensuring that no personal information was exchanged between the clinical team and the researcher until consent had been provided; at which point signed consent forms were provided to the researcher. Participants were assured of their right to withdraw prior to and after telemedicine consultations had occurred. Given the nature of speech language therapy, sensitive topics and concerns can be raised by patients during the course of a consultation of which they may not want included as part of the data. Patients were asked at the end of consultations if they were still happy for recordings to be passed to the research team. They were also reminded of their right to withdraw, or to remove a consultation from the data set at a later date if they wished. Patients were informed that to remove any data they should contact the SSLT co-ordinating the telemedicine sessions or to contact the researcher of the project. Participants were able to withdraw their data at any point following the completion of data collection.

3.3 Data Analysis Process

During the physical examination sequences, the participants are primarily oriented towards the videoconferencing equipment located in the centre of the room. Following the initial connection being established, the consultations adopted similar sequences of talk though not confined to a particular overall sequencing. These included both social and medical talk consisting of pain relief and drug usage talk, diet, feeds and swallowing ability, usage and frequency of mouth exercises, organisational talk for future consultations and physical examinations concerning swallowing with food and liquid, mouth opening exercises and inspection of mouth opening progression including measurement taking. A variety of medical tasks are to be achieved within the duration of the consultation (dependent on the medical needs and requirements of the patient) which are broadly demonstrated below,

1. Establishing initial connection and greetings
2. Medical sequences
    - Diet, nutrition and swallowing ability with physical examination
    - Usage of exercises with physical examination
    - Pain relief

    - Use of therabite and mouth opening ability with physical examination
    - Physical examination of mouth and neck
    - Neuromotor assessment
3. Summary talk from specialist SLT around consultation and establishing future consultation appointment
4. Concluding sequence from specialist SLT
5. Disconnecting from videoconferencing equipment.

Within this broad sequencing of the overall consultations, the physical examinations are not confined to one given sequence of talk. Rather, they are implemented within the talk based on the prior turns and the interactional relevance of a physical exam being conducted. For clarity, the therabite is a piece of equipment which is used by the patient in order to stretch their mouth opening and work the muscles of the jaw. This involves the patient placing the therabite in their mouth and completing a regime. For example, this could consist of the five times thirty which is five sets of thirty second stretches with the therabite. A neuromotor assessment requires the patient to produce verbal utterances (ooo, eee, aaa) in order to assess the physical movements of the patient's mouth within these physical examination tasks, sequences of requests were seen to adopt a uniform structure in their implementation with turns at talk.

3.3.1 Conversation Analysis

The data was analysed using the qualitative method of conversation analysis. CA examines the sequential aspects of talk as a collaborative endeavour and provides a detailed analysis of the structure of talk within a naturally occurring context.

In regard to the current study, the process of analysis began with watching through recordings and producing a basic transcript of the consultations. This stage allowed for the initial familiarisation of the data as well as capturing the talk in interaction between participants. Following this, recordings were viewed in more detail and non-verbal behaviours and points of interest within the data were noted for further exploration. Following this, potential avenues of exploration from the data were considered and discussed. All measures were taken to be as unobtrusive as possible on the consultations, including consideration of camera positioning when recording and involvement of the researcher in obtaining the data.

As an analytic approach, CA has established philosophical underpinnings. Firstly, CA adopts an emic perspective towards its data. Etic and Emic perspectives arise from anthropology, and in a way are analogous to phonetic and phonemic terms utilised in linguistics (Ten Have, 2007). Pike (1967) defines the Etic perspective as studying behaviour from outside of a particular system, unlike the Emic perspective, which studies behaviour from inside of a system. Put another way, the Etic perspective adopts criteria external to a system and can be formulated prior to analysis, whereas the emic perspective is concerned with a particular system and allows for the discovery of avenues of exploration from the system itself (Ten Have, 2007). CA then adopts an Emic perspective primarily concerned with the procedural infrastructure of situated action in talk (Goodwin, 1984; Ten Have, 2007).

A second philosophical underpinning of CA concerns the way in which the analytic function of a data set is conceived (Alasuutari, 1995; Ten Have, 2007). Alasuutari (1995) outlines two approaches in this respect; these being the factist perspective and specimen perspective. The factist perspective, commonly adopted within qualitative research when utilising questionnaires or interviews, is an approach which views data as statements or reflections of a state of affairs, for example representing an individual's internal state (Ten Have, 2007). A specimen perspective on the other hand, approaches data not as a reflection of a particular reality but as part of a reality being studied (Ten Have, 2007). Simply put, CA through adopting a specimen perspective towards data, is not concerned with honesty when studying a particular reality, as it does not seek to show reflections of a reality "out there", rather it seeks to build a collection of specimens which show variations of specific interactional events/processes in order to be systematically compared (Goodwin, 1988; Ten Have, 2007).

Athird underpinning is rooted in CA's inductive approach towards the data. This is the idea that evidence is utilised in order to construct and reconstruct ideas or concepts (Ragin, 1994). This allows the possibility for research questions to emerge based on the nature and content of the data and is intrinsically related to the other philosophical underpinnings of the approach. However, CA as a purely inductive approach has been disputed within the area, with the argument that the initial analysis is rooted in an inductive approach when searching for and building collections of specific interactional phenomena, however following this a deductive approach is adopted when considering the phenomena in relation to previously established research (Heritage, 1988; Ten have, 2007).In the context of the current study, an inductive approach was first drawn upon to explore the data, followed by contextualising the phenomena in relation to established research.

A final point of consideration underlying CA concerns the use of naturally occurring interaction as its data. CA as an analytic approach does not draw on other sources of data such as interview data, observational studies or experimental methodologies for the primary reason that these forms of data collection are considered in this paradigm as being too reliant on pre-conceived ideas and notions of what is important, which may result in a higher likelihood of manipulation, misconstruction or misinterpretation of data (Heritage & Atkinson, 1984). CA's approach in this respect concerns the examination of naturally occurring interaction of an instance of talk as it would take place without researcher observation and which is not co-produced or influenced by the researcher themselves (Ten Have, 2007).

3.3.2 Transcription

Transcription serves as a function of capturing aspects of language and talk of a dataset, be they collected through interview settings or in naturally occurring situations. The process of transcribing a dataset entails important considerations. Firstly, transcribing is argued to be more of a theoretical process than a technical process, which reflects the theoretical underpinnings and conventions of the specific approach of the discipline being adopted (Green, Franquiz, & Dixon, 1997; Guest & MacQueen, 2007). In other words, the details of interaction that are transcribed, and the details that are not transcribed, in turn influence the process of analysis that follows (Guest & MacQueen, 2007).

The following study adopted the Jefferson transcription system. This system was originally proposed by Sacks, Schegloff, & Jefferson (1974) and has subsequently been developed and refined by Jefferson (1983). The analytic concerns of this system are principally the dynamics of turn taking and characteristics of speech delivery (Hutchby & Wooffitt, 2008). These aspects are embodied in the transcription layout; following a line by line transcription of each utterance within the interaction. Within this system, accuracy in transcribing, and the process of transcribing is an essential part of the analysis. This is rooted in the assumption within conversation analysis that any sound uttered within talk may have interactional significance or relevance in communicating meaning or understanding (Hutchby & Wooffitt, 2008). A glossary of the transcription conventions is presented in the appendices (See appendix D)

The process of transcribing the telemedicine consultations consisted of two stages. The transcription process utilised the software programme Transana which allows for the viewing

of video and audio files alongside transcripts. The first stage consisted of a basic transcription of the entire data set. This entailed transcribing each verbal utterance from participants in the recordings whilst capturing surface details of the interaction such as overlapping talk and laughter. This stage allowed for a process of familiarisation with the dataset and contributed to the initial 'noticing' of potential avenues for analysis. Following this and the identification of the phenomena from the approach of unmotivated looking at the dataset, selected extracts were transcribed in more detail using the Jefferson transcription system. This consisted of a more in-depth transcription of the verbal utterances consisting of identifying pauses, intonation, pitch changes and elongation along with the embodied actions of the participants. With the embodied actions, previous systems implemented by authors such as Goodwin (2000) and Mondada (2007;2014) were utilised as frameworks to inform the transcription of embodied actions within the current study. With the extracts, titles are provided to given an overview of the phenomena being considered, the consultation they occurred in within the data set and the time in which they occurred during the consultation.

3.4 Identification of Phenomena

The process of identifying phenomena is rooted in the initial stages of the conversation analysis process. This consisted of the 'noticing' of interesting interactional phenomena based on the conversation analytic inductive approach to the data. Within a CA paradigm noticing relates to aspects of turn design, turn taking and the sequential structure of the interaction. From the stage of unmotivated looking and the initial noticing of interesting interactional phenomena, collections of similar instances are built up in order to present a coherent picture of an aspect of the interaction. With this, consideration is given to the deviant cases within collections and how these can further demonstrate participants' orientations during interaction.

Within the current study, a variety of interesting interactional phenomena were identified during the process of unmotivated looking. Initially, two points of interest arose which consisted of the noticing of other initiated other repair sequences when using videoconferencing and the means by which patients were invited into the interaction when using videoconferencing. With other initiated other repair sequences, it was noticed that following an utterance from the SSLT oriented to the patient, the patient in response would direct her repair sequence to the GSLT present in the room with the patient rather than the SSLT whom had instigated the utterance. Upon exploring this further, a few instances were Found across the dataset, however not enough occurrences were obtained to form a collection.

The second initial point of interest concerned the means by which patients were invited into the interaction, which were identified as consisting of devices such as checking in with the patient, instructions, requests, feedback utterances, suggestions and information providing. These aspects resonated with the broader interest with the researcher concerned with the interactional restrictions which were introduced when using telemedicine videoconferencing and how they were managed during the interaction, which led the research to consider the means by which medical tasks were achieved, specifically relating to medical tasks which required embodied actions in their fulfilment. This led to examining a means by which medical tasks were instigated. It was found at this stage that two prominent means of initiating medical tasks were through instructions and requests. These were further explored, considering the different functions of instructions which included instructions for verbal actions, instructions for commencing an embodied action and instructions for stopping an embodied actions. Requests on the other hand were identified as functions to elicit confirmation, clarification, information and undertaking embodied actions. Further considering requests and their function in achieving medical tasks, it was found that requests were not fulfilled in the following turn but rather requests were extended over a sequence of talk during physical examinations. With these extended sequences, consideration was given to the overall sequencing of these requests and how medical tasks were achieved through these sequences of talk when using videoconferencing.

3.5 Validity and credibility with naturally occurring interactions

When capturing naturally occurring interaction through video and audio recordings, consideration must be given to the validity and credibility of the interpretations and observations. When adopting a CA approach, an issue of importance concerns apparent validity, the notion that what is seen or read is transparently the case (Perakyla, 2011).

Within the following study, there were several methodological factors for consideration. One of these factors concerns the role of the SSLT in setting up and carrying out the recording of the consultations. Given the involvement of the SSLT in the data collection process, there is potential for researcher bias. Within a CA framework, this concerns the SSLT bringing out the camera during the course of the interaction. During data analysis, there were

occasions where the SSLT oriented her gaze directly to the camera recording the consultations, as well as instances of checking to see if the cameras were still recording, potentially displaying an active awareness of being recorded which could subsequently influence her turns at talk within the interaction. However, the camera itself was left unattended throughout the majority of the consultations. Concerning this matter, whilst the camera is always relevant during the consultations, it is not always present to the participants. When it is made relevant, participants actively orient to the recording equipment itself. With this then, rather than stating there were changes in participants' behaviour, we can see the recognisable actions that participants produce as a result of the video recording equipment (Laurier & Philo, 2010).

CA's epistemological position is in part concerned with talk in interaction as a site for analysis within itself, rather than as a lens from which to consider broader social processes (Hutchby & Wooffitt, 2008). It could therefore be argued that the factors identified as methodological concerns are inconsequential in terms of having an impact on the data collection process. To elaborate, if talk in interaction is a site for analysis within its own right, then external variables, such as an awareness of recording equipment during the consultation, would not necessarily detract from the interaction itself, as the demonstration of awareness would become an aspect for consideration during the process of analysis. In ensuring validity from a CA perspective, Perakyla (2011) outlines how this is achieved including transparency of analytic claims, validation through the next turn and deviant case analysis. Transparency of analytic claims relate to the previously discussed 'apparent validity' in that the claims of the analysis accurately reflect what is actually occurring in the interaction. Validation through next turn relates to the next turn proof procedure (see section 3.3.1) and is considered as an essential component in ensuring validity with interpretations in that emphasis is placed on the next speaker's interpretation of the previous speaker, rather than the researcher's interpretation of what is going on (Perakyla, 2011). Finally, deviant case analysis considers extracts which show a departure from the expected course of events. These cases can help in providing rigour in developing analytic arguments and provide a resource in testing hypothesis and showing collections of interactional phenomena (Perakyla, 2011). Through employing these procedures, the validity and rigour of the collections considered can be further ensured as accurately refelecting what is occurring within the interaction.

It is acknowledged that there is no transcription system available to capture all the potential aspects of talk (Hutchby and Wooffitt, 2008). In conjunction with this, from a given dataset a vast number of potential avenues of exploration can reveal themselves, which lead to

certain avenues being further explored than others. This process was rooted in CA's analytic approach of unmotivated looking and familiarisation with the data to gain an "intimate acquaintance" with the data set (Hutcby and Wooffitt, 2008). Certain avenues of exploration were considered more so than others based on these stages as well as the strength and rigour of collections that came about.

A further consideration with the ontological concerns pertains to perceptions towards reality. Within a CA paradigm, the researcher, though operating within a framework and transcription system which is inherently theoretical (Hutchby & Wooffitt, 2008), does not impose (or attempts to limit) their pre-conceptions of reality onto the data analysis. This approach seeks to understand the social constructs talked into being by participants themselves and therefore constructs which have a reality for the participants rather than the researcher.

With the epistemological reflections, a consideration concerns the basis from which the researcher is working from in relation to the data. CA stemmed from the work of Erving Goffman's interactional order and Harold Garkinel's Ethnomethodology (Ten Have, 2007). However, an important aspect of consideration pertains to the development and use of CA within other paradigms/areas. For example, operating from a psychological background may pre-dispose researchers to attend to certain aspects of talk when familiarising themselves with a dataset, whereas a researcher operating from a linguistic background may attend to or place emphasis on other aspects of the data. This, then, was an important consideration throughout the research process to not impose previous theoretical assumptions or understandings onto the data set, especially in the sense of production of new knowledge through the process of inductive analysis. This was accounted for through applying the procedures of validation within CA, particularly relating to the next turn proof procedure as well as being transparent in the analytic claims of the study.

4 ANALYSIS OF EXTENDED REQUESTS IN TELEMEDICINE PHYSICAL EXAMINATIONS

4.1 Introduction

This analysis considers a means by which medical tasks are achieved in physical examinations when using telemedicine videoconferencing. This concerns the use of extended request sequences in order to facilitate the fulfilment of medical tasks between the specialist speech and language therapist (SSLT), general speech and language therapist (GSLT) and patient. Commonly, requests have been considered as actions occurring within a single turn construction unit, whereas extended request sequences involve multiple courses of action which are unpacked and accomplished over several sequences (Lee, 2009). This analysis proposes a variation on Lee's (2009) definition of extended request sequences. Within this data, fundamental similarities are shared with Lee's (2009) definition of extended requests in that the action of requesting is extended over several sequences rather than occurring at a fixed point during the interaction. However, this data set seeks to build on Lee (2009) in considering how the request is collaboratively fulfilled between the participants, rather than considering how the individuals construct the request components in the interaction. Given the different institutional context, participants within the dataset manage the interactional restrictions in facilitating the achievement of medical tasks, rather than specifying the components of the request. With this in mind, the achievement of medical tasks occur over extended sequences with participants undertaking different action components towards its fulfilment rather than specifying the components of fulfilling the request itself.

With these points in mind, the characteristics of what constitutes an extended request within the current analysis are presented below.

1. The initial request projects the course of action and starts a sequence of talk in fulfilling the requested action
2. The fulfilment of the request is unpacked over a sequence of talk and collaboratively fulfilled by the participants whom undertake different action components

3. Thus the request itself is extended and fulfilled over sequences of talk rather than fulfilled in the following turn at talk.

The extracts below provide a breakdown of the different components of what constitutes an extended request, the first extract providing the initial request and the second extract demonstrating the subsequent sequence of fulfilling the request over several turn construction units.

Initial request

2) (14) <00.09.18>

1	SSLT	okay s:o (.) i mean be **[**good to just see you having a little bit of drink and something	Initial request
		[turns gaze from notes to VC equipment	
2		to eat if that's alright so we can have a check of **[**your swallow is that [o↑kay?	Lines (1-3)
3	GSLT-W	***[turns gaze to P***	
4	P	***[slight nod***	Response to request
5		(1.1)	
6	P	yeah yeah no problem	Lines (4-5)

Subsequent sequence of fulfilling request

7	GSLT-W	ye↑ah	
8	SSLT	Y[ea:h]	
9	P	[yeah]	
	P	***Moves hand to table in-front***	
10	GSLT-W	***Points with pen to table infront of patient***	
11	GSLT-W	There's **[**som- there's [some water there	
12	P	***[brings water into view of VC equipment***	
13		***[points to infront of GSLT, lowers hand***	
14	GSLT-W	***Re-orients body towards patient, raises hand out towards patient, retracts hand to her neck and moves hand outwards towards patient***	
15	P	**[**yeah	
16	P	***[nods***	
17	GSLT-W	Just place my fingers on **[**your **[**throat jus so I can **[**feel	
18	GSLT-W	***[places fingers on patients throat***	
19	P	***[raises cup of water to mouth***	
20	P	***[takes sip of water***	
21	P	***Lowers cup down onto table, swallows water (4.6)***	
22	P	**[**Enough?	
23	P	***[turns gaze to GSLT***	
24	GSLT-W	Yep **[**good	Point of fulfilment (lines 24 and 25)

25 GSLT-W ***[removes fingers from patients through, turns body from patient towards table***

What these extracts serve to illustrate is that the initial utterance in the sequence constitutes a request in the sense that it consists of asking the patient to undertake a task, in this example having a drink of water to check the patient's swallow, and it seeks the assistance of the patient in achieving this medical task (Drew & Couper-Kuhlen, 2014). The request itself then rather than being fulfilled in the following turn, is unpacked over several turn construction units between the GSLT and patient who collaboratively facilitate the fulfilment of the medical task. Both the GSLT and patient undertake different action components, for example the patient drinking the water (lines 20,21) and the GSLT placing her hands on the patient's throat to feel the swallows (line 18) to facilitate the fulfilment of the initial request within the extended sequence.

Across the dataset there were 20 sequences of extended requests made in order to initiate a medical examination or task, for example examining the patient's mouth opening, conducting a neuromotor test or swallow test and completing a therabite regime. The figure below displays the overall structure of extended request sequences and the different components which will be considered. Whilst the following sections are split to provide focus and clarity on the individual components, the analysis is concerned with the full extended request sequence when using telemedicine videoconferencing. Throughout, credence will also be given to the crucial role of the GSLT concerning two aspects in the fulfilment of extended requests. Firstly, in facilitating request making through clarifying and repairing initial requests components. Secondly, in facilitating the fulfilment through increasing patients' embodied actions as well as the GSLT's embodied actions in carrying out the initial request. With this, consideration will be given to the ways in which the GSLT responds to and enacts implicit and explicit requests.

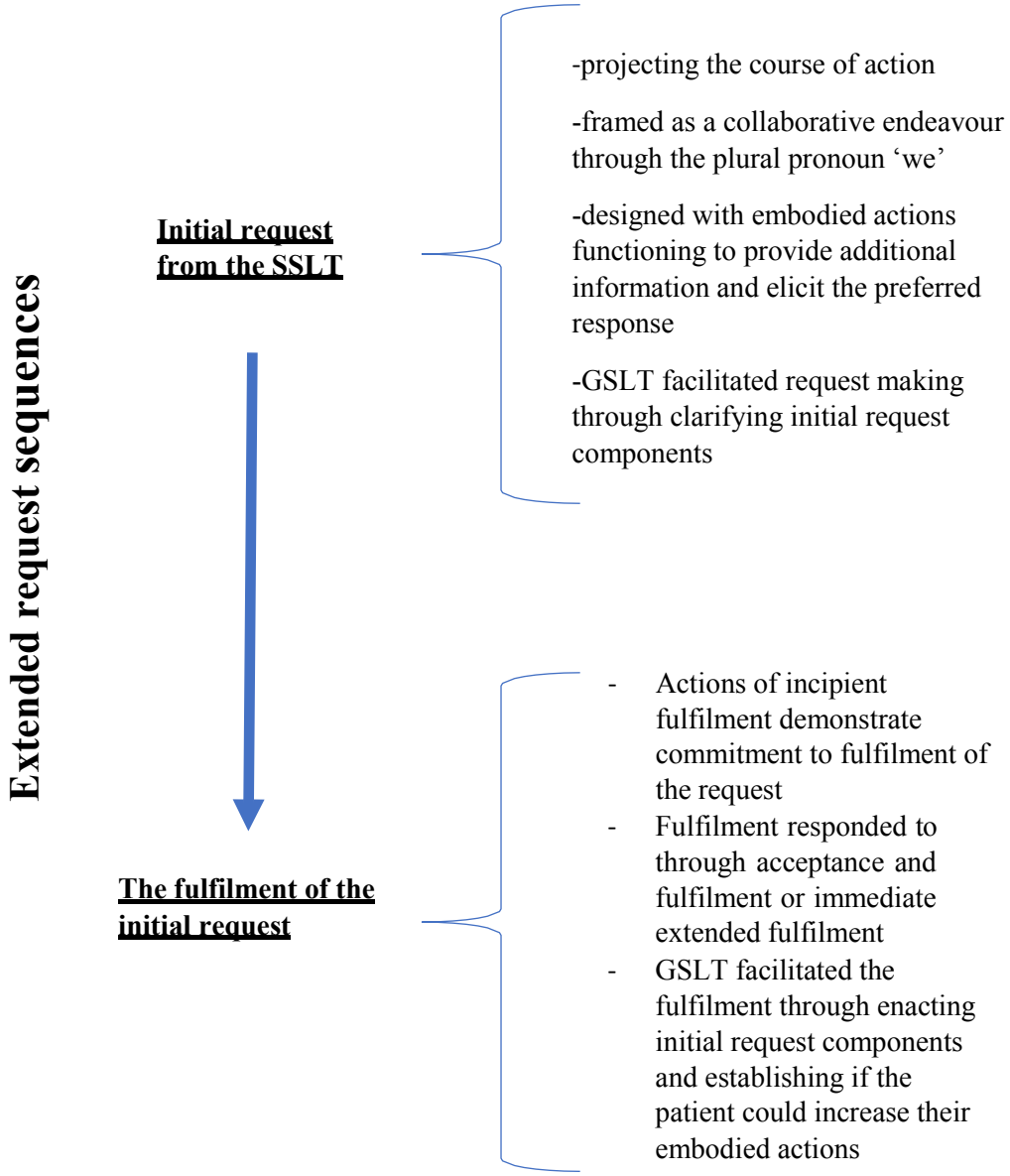

Figure 4.1 Overall sequencing of extended requests in SLT telemedicine physical examinations

4.2 Projecting the course of action

The following section considers the initial request within extended request sequences. Within the extended request sequences, the initial request functioned to project a course of action. Through projecting the course of action (Schegloff, 1980) recipients are informed of

the details of the request, and the actions required for its fulfilment within the ensuing turns at talk (Lee, 2009). Eighteen of these requests were instigated by the SSLT, with two instances of the GSLT instigating the request sequence.

Within the following extract, we can observe the SSLT initiating the course of action for the therabite regime with her extended request. From the initial request, the patient proceeds with is fulfilment however abandons the course of action due to experiencing pain.

Extract 1- projecting therabite regime (1) <00.06.32>

1	SSLT:	i think yeah let's see what you're like with your{five-shall we do
2	P	***{moves therabite into mouth***
3	SSLT	the five times thirty are you due a set? .hhh.
4	P	***Adjusts therabite in mouth***
5	SSLT	okay n stretch
6		(0.5)
7	SSLT	count to thirty one
8		(0.5)
9		Two
10		(0.4)
11		Three
12		(0.5)
13		Four
14		(0.5)
15		Five
16		(0.6)
17		Six
18		(0.6)
19		Seven
20		(0.5)
21		Eight
22		(0.5)
23		Nine
24		(0.7)
25		Ten
26		(0.7)
27		Eleven
28	P	***Quickly removes therabite from mouth***
29	SSLT	too [pain] ful?
30	P	{[sorry]
31	P	***{raises hand to cover mouth***
32	P	(°an then it hurts°)
33	P	***Moves to put therabite back into mouth***
34	SSLT	its ok
35	GSLT-C	is it painful mary↑
36	P	{yeah
37		***{turns gaze GSLT-C, back to SSLT***
38	GSLT-C	[Yeah

39	GSLT-C	***[turns gaze briefly to SSLT, back to P***
40	SSLT	Hmm °okay°
41	P	**Moves therabite back into mouth, adjusting therabite in mouth**
42	GSLT-C	is it holding its painful↑
43	P	**{**eah
44	P	***{adjusting position of therabite in mouth***
45	GSLT-C	Yeah
46	SSLT	maybe the sevens would be better for you then liz just a
47	SSLT	seven second h[old
48	GSLT-C	[yeah

This request is initially framed to seek an observation of how the patient performs with the therabite regime *"let's see what you're like with your*" (line 1) before being redesigned with the inclusion of the plural pronoun we, *"shall we do the five times thirty"* (line 1-3). The five times thirty is a regime which entails doing five sets of thirty second holds with the therabite stretching the muscles around the mouth and jaw. This initial request sequences projects the course of action for the regime *"the five times thirty"* to be fulfilled over an extended sequence. During the SSLTs initial request, the patient demonstrates her understanding of the actions required for its fulfilment through moving the therabite into her mouth. This initial request is explicit in that it details the course of action to be undertaken with the patient identifying herself as the recipient.

Within the extract, we can also observe how the GSLT-C facilitates request making through repeating an interrogative from the SSLT which isn't responded to by the patient. Following from the initial request the patient attempts the thirty second therabite regime, reaching eleven seconds as she quickly removes the therabite from her mouth (line 28). From this, the SSLT produces her interrogative to establish if the patient is experiencing too much pain during her actions "too painful" (line 29). During her utterance, the patient self-selects with an apology token "sorry" (line 30) demonstrating her dispreferred response in fulfilling the initial request, simultaneously as she raises her hand to cover her mouth (line 31). She holds the communicative floor with her declarative which is quieter as her hand covers her mouth "*an then it hurts*" (line 32) displaying the point in which the pain sets in during the regime. From this, the patient moves to put the therabite back in her mouth, in order to continue with the regime (line 33). The SSLT produces her response token "its ok" (line 34) to the patient's apology, followed by the GSLT-C self-selecting in the talk, upgrading the SSLT's previous interrogative through the use of the patient's name and placing emphasis on the difficulty "is

it painful Mary" (line 35). The patient responds in the following turn with her acknowledgement *"yeah"* (line 36) as she redirects her gaze to the GSLT-C, displaying her orientation to her interrogative, and back to the SSLT (line 37). The GSLT-C repeats the patient's response token (line 36) as she simultaneously turns her gaze to the SSLT, orienting to her and providing a response regarding her previous interrogative. The SSLT acknowledges this in the following turn, having established the patient has been experiencing pain. The GSLT-C's self-selecting during this sequence facilitates the further fulfilment of the initial request through addressing a contingency with the patient of them being in discomfort. The GSLT-C repairs the sequence through actively clarifying the patient's discomfort in the fulfilment of the initial request for the SSLT, placing emphasis on "painful" (line 35) during her interrogative, and actively re-orienting her gaze to the SSLT as she simultaneously repeats the patient's response (Line 38). Through this, the GSLT clarifies for the SSLT, allowing for the addressing of the contingency within the interaction which is achieved through the SSLT suggesting a different regime to undertake consisting of a seven second hold (Line 46).

This extract demonstrates the initial request projecting a course of action to be undertaken by the recipient, in this example the patient. During its fulfilment, the patient abandons the course of action as a result of experiencing pain. The GSLT-C clarifies this for the SSLT through obtaining a response from the patient. This leads to the regime being undertaken to be modified to allow the medical task of undertaking the therabite regime to be progressed.

The following extract (extract 2) whilst projecting the course of action oriented towards the patient, is also designed with a pre-sequence of a possible contingency relating to the duration of holding the therabite being long for the patient.

Extract 2- projecting with possible contingency (9) <00.26.15>

1	SSLT	↑O↓kay (.) {okay it might be worth once you've had a drink just to
2	P	***{raises drink to mouth, drinks***
3	SSLT	See {how you {fe:el keepin the hold {for thirty seconds
4	P	***{lowers drink from mouth {redirects gaze to SSLT***

5	SSLT	***{raises hand to mouth, pinching gesture by mouth***
6	SSLT	{its quite a lo:ng hold .hhh er:m
7	SSLT	***{lowers hand***
8	P	(bit long that) {isn't it yeah
9	P	***{directs gaze away, places water bottle on floor***
10	SSLT	Ye:ah it is quite long thirty seconds {.hhh ma↑ybe let just shall we
11	SSLT	***{raises hand to mouth, lowers hand***
12	SSLT	just {try that once just to see if you can hold that comforta↑bly?
13	P	***{redirects gaze to SSLT, wipes mouth with tissue***
14		(1.2)
15	SSLT	ye↑ah?
16	GSLT-L	***Turns gaze to patient***
17	SSLT	wanna {give[that] a g↑o
18	P	***{turns gaze to GSLT-L***
19	P	[sorry]
→ 20	GSLT-L	shall we shall we just {try that once to see if you can {hold for
21	GSLT-L	***{raises hand clasped {moves hand slightly toward patient,Lowers hand***
22	GSLT-L	thirty seconds [comfortably?] yeah
23	P	[yeah alright then yeah]

Within this extract, the SSLT initiates an incomplete projected action in line one "*okay it might be worth"*. The patient, during the SSLT's turn at talk, raises her drink to her mouth and starts drinking, which is recognised by the SSLT during her initial utterance as a prior action that, once completed, can allow an unspecified requested action to go ahead *"once you've had a drink just to see*" (line 1). In line 3, the SSLT utters the requested action component oriented towards the patient "*how you feel keepin the hold for thirty seconds*" followed by specifying an aspect of trouble "*it's quite a long hold"* (line 6). During her turn, the SSLT raises her hand to her mouth with a pinching gesture, functioning as an iconic gesture, a gesture which depicts the content of speech (McNeil, 1992) to provide specific information regarding the location of action with the preferred response which has been demonstrated by Taleghami-Nikazm (2008) in foreign language learning classrooms. Following the transitive

verb *"hold"* the SSLT lowers her hand as she declares the duration of the requested action (lines 3 and 7). This is acknowledged by the patient in the following turn "*bit long that isn't it yeah*" (line 8) downgrading the SSLT's previous assessment of "quite long" to "bit long" before enacting the requested component, as she places her water bottle on the floor (line 9), briefly directing her gaze away from the SSLT. The SSLT responds in the following turn, first displays alignment with the patient's response "yeah it is quite long" however maintains use of the adverb "quite" following the patient's downgrade. Though both are in alignment with the thirty second hold being a long duration, the SSLT continues with her request which similar to previous extracts, is framed as a collaborative endeavour "*let just shall we just try that*" (line 10-12), switching from her previous utterance which was designed as an action for the patient "*how you feel keepin the hold"* (line 3). The SSLT with her request also employs hedges, which have been identified as aiming to mitigate face threats and lessen the impact of an utterance whilst also demonstrating different degrees of certainty (Boncea, 2014). Within this request turn from the SSLT, she employs the use of "*maybe*" and "*try that once"* as hedges in order to reduce the impact of the request on the patient in order to facilitate the fulfilment of the request. Arguably, the hedges are sequentially employed following the previous turns at talk establishing the hold being long for the patient, thus reducing the impact of the requested action on the patient whilst still facilitating the fulfilment of the request and avoiding a dispreferred response.

Similar to previous extracts, this request projects the course of action to attempt the thirty second hold once to see if the patient can hold it comfortably. What differs in this extract, is the SSLT addressing a contingency in the fulfilment of the initial request prior to producing the request itself. Once the contingency is managed with the patient, the SSLT re-employs her request, projecting the course of action to be fulfilled over the extended request sequence.

In conjunction, we can observe how the GSLT facilitates request making through clarifying the initial request in this case for the patient rather than the SSLT. From the SSLT prompting her initial request, a 1.2 second silence occurs with no response from the patient in the following turn. The SSLT proceeds to self-select seeking acknowledgment from the patient with her utterance with increased intonation *"ye↑ah?"* (line 15). The GSLT-L redirects her gaze from the SSLT to the patient in the following turn, as the SSLT proceeds to produce a further interrogative to establish the patient's acknowledgment "*wanna give that a go"* (line 17). During her utterance, the patient redirects her gaze to the GSLT-L (line 18) actively orienting to her and produces an apology token in overlapping talk *"sorry"* (line 19)

elucidating to trouble within the turns at talk (Robinson, 2004). Here the patient seeks clarification, oriented towards the GSLT-L rather than the SSLT having uttered the previous interrogatives in an attempt to establish conformation. The GSLT-L proceeds to redesign the SSLT's previous request as an interrogative rather than as a declarative and interrogative. During the GSLT-L's interrogative (line 20, 22) she raises her hand clasped towards her mouth, before moving her hand slightly towards the patient at "hold", the action associated with the request, and then lowering her hand (line 21). The patient responds in overlapping talk, providing conformation for the request sequence to go ahead (line 23). This extract demonstrates the patient seeking clarification which is actively oriented to the GSLT-L through her gaze change and apology token. The GSLT proceeds to clarify the initial request for the patient, repeating the SSLT's initial request and establishing understanding with the patient, who then provides confirmation and facilitates the ongoing fulfilment of the request sequence. The GSLT then, facilitates the request making, reemploying the SSLT's initial request as a result of the patient seeking clarification.

The previous extracts therefore all demonstrate how the initiation of extended request sequences from the SSLT project courses of action to be fulfilled between the participants over a sequence of talk. The two deviant cases (extract 3 and 4) found when initiating extended request sequences occurred from the GSLT-W and were employed following turns at talk relevant for the medical task, with both of the following extracts present in the same consultation relating to two different medical tasks.

For example, extract 3 below displays a sequence of talk whereby the SSLT first comments on the patient's voice improvement *" I was thinking it's probably the nicest I've heard it for a while your voice today" (*line 1) During the SSLT's turn, the patient interjects, acknowledging the SSLT's declarative regarding the improvement with his voice (line 4).

Extract 3- GSLT initiation of timed swallow (11) <00.30.20>

```
1     SSLT   i was thinking it's probably the nicest i've heard it for a
2            while your voice today but[you'll      ]be paying for it
3     P                                [yeah        ]
4            tomorrow now {d'you want some water making you talk
```

5	SSLT	***{points towards VC equipment***
6	SSLT	On a **{**[dry]
7	GSLT-W	***{turns gaze to P***
8	P	[(ye]ah] i could do with a **{**drop)
9	GSLT-W	***{turns gaze to SSLT***
10	GSLT-W	can we do that timed swallow [again] or
11	SSLT	**{**[yeah] let's do that yeah let's
12	SSLT	***{turns gaze from VC equipment to notes on table***
13	SSLT	have **{**a timed swallow whilst Chris is getting **{**dry
14	GSLT-W	***{moves cup of water from side of VC equipment to in front of patient***
15	P	***{moves hand Towards water***

The SSLT continues her turn at talk producing her incomplete interrogative *"d'you want some water making you talk on a dry*" (line 4 and 6) as she points towards the VC equipment, functioning as an iconic gesture to relate the actions of the interrogative to the patient through pointing. Towards the end of the SSLT's utterance, overlapping talk occurs with the patient as he produces his declarative, acknowledging the SSLT's interrogative "*yeah I could do with a drop*" (line 8). Towards the end of the patient's utterance in line 8, the GSLT-W redirects her gaze to the SSLT, demonstrating her orientation to the SSLT (Goodwin, 1980). In the following turn, the GSLT-W self-selects with the request for a timed swallow *"can we do that timed swallow again or"* (line 10) which is acknowledged and agreed to by the SSLT in the following turn "*yeah let's do that let's have a timed swallow whilst Chris is getting dry*" (lines 11-13) during which the SSLT redirects her gaze to notes on her table (line 12), followed by the GSLT-W moving a cup of water in front of the patient in preparation for the requested action (line 14).

Within this extract, the GSLT-W's initiation of the request sequence occurs as a result of the prior turns at talk between the patient and SSLT. As the SSLT proposes an action through her interrogative for the patient to have a drink, the GSLT-W initiates her request for the timed swallow. The GSLT-W within this extract actively orients to the SSLT through her shift in gaze to produce her interrogative for the timed swallow test. The GSLT orienting her gaze to the SSLT demonstrates her seeking conformation for the fulfilment of her request to go ahead

from the SSLT. With her request which follows, through employing the modal verb "*can we*", the GSLT displays the conditions of fulfilling her request as unproblematic, as demonstrated in research by Curl & Drew (2008). The SSLT then acknowledges and agrees to the GSLT's request, enabling the extended request sequence to be acted out between the participants.

The other deviant case follows from a previous sequence of talk consisting of a series of questions from the SSLT oriented towards the patient concerning problems opening his mouth. The patient responds to the SSLT's question, and from this the GSLT interjects with her utterance "*have a quick measurer"* (line 4).

Extract 4-GSLT initiating measurement (11) <00.23.25>

1	P	If I open it wider than (.) I normally do it will urt
2	SSLT	**{** mkay .hhh e:r:m
3	GSLT-W	**{turns gaze to SSLT**
4	GSLT-W	((have a quick measurer))
5	GSLT-W	***Leans across VC equipment***
6	SSLT	yeah **{**shall we have a[me]asure see where you're at
7	P	[ye]
8	GSLT-W	***{retracts hand, brings ruler into view***
9	SSLT	**{**with that I'm tryin [te]-
10	GSLT-W	***{turns body towards patient***
11	GSLT-W	[ju]st just open it to where its comfortable
12	P	***opens mouth***
13	GSLT-W	***Places ruler on patients bottom lip***
14	SSLT	yeah just stretch as much as you can really
15	GSLT-W	***Leans in towards patient, gazes at ruler by patient's mouth (1.1)***
16	GSLT-W	(there we are) one two three
17		(0.6)
18	GSLT-W	**{**three n a half (.) centimetres
19	GSLT-W	***{retracts ruler from patient's mouth, turns gaze to SSLT***
20	P	***closes mouth***

21 SSLT {oka:y thats not too bad oka:y er:::m three point five centimeters

22 SSLT ***{gaze directed towards notes on table***

Following her utterance, the GSLT-W leans across the VC equipment, which as shown later in the transcript, served the function of obtaining a ruler necessary for the fulfilment of the request (Line 8). The GSLT-W's utterance in line 4, is interpreted by the SSLT in the following turn as a request, demonstrated through her acknowledgment token "yeah" and her reframing of the GSLTs utterance to a more explicit request as she continues to utter an elaborated request oriented towards the patient, framed as a collaborative endeavour again through the use of "we" before beginning to declare her own actions which she abandons in overlapping talk with the GSLT-W *"shall we have a measure see where you're at with that I'm tryin te"* (line 6-9). During the SSLT's utterance, the patient responds with his acknowledgement token (line 7) as the GSLT-W retracts her hand bringing the ruler into view of the VC equipment, and therefore the perspective of the SSLT as she continues to re-orient her body towards the patient, demonstrating a shift in alignment and involvement in the ongoing actions (Kendon, 1990; Goodwin, 2003). Following her embodied actions, the GSLT-W self-selects in overlapping talk with the SSLT with her imperative oriented towards the patient *"just just open it to where it's comfortable"* (lines 11). The patient then proceeds to responds to the imperative in the following turn through his embodied action of opening his mouth, as the GSLT-W moves and places the ruler on the patient's bottom lip (line 13). Following this, the SSLT self-selects with her imperative *"yeah just stretch as much as you can really"* (line 14) Which provides a different action response for the patient in contrast to the GSLT-W's imperative (line 11) as the GSLT-W and patient are engaged in the fulfilment of the initial request (line 13). With this, the GSLT-W's embodied actions are integral to the granting of the initial request. Through her actions, she conducts the medical task, enacting the initial request component and relaying the information to the SSLT on its fulfilment.

This extract further demonstrates a case where the extended request sequence is initiated by the GSLT-W, who orients her request towards the SSLT, who acknowledges and agrees to the proposed course of action. The SSLT enables the course of action to go ahead through her agreement, and therefore facilitates the fulfilment of the initial request in the extended sequence.

The two deviant cases displayed here show instances where the GSLT-W initiates the extended request sequence following a sequence or action relevant to the medical task itself.

This occurs during the interaction as a result of the medical task being associated with the previous turns at talk or actions of the patient. For example, within extract 3 the patient going to take a drink of water, encompassing actions required in the fulfilment of the swallow test. Within extract 4, the previous turns at talk concern the patient's ability to open his mouth that allows the GSLT to implement her request to measure the patient's mouth due to its association to the previous turns at talk. In each extract, the GSLT first turns her gaze to the SSLT prior to initiating her extended request. Arguably, this is tied to the institutional relevant identities and the entitlement of the GSLT to make the request during the interaction. That is to say that the institutional interaction places constraints on what is an allowable contribution to the interaction (Heritage, 2005). As demonstrated, the SSLT predominately instigates courses of action to be undertaken. With the GSLT's gaze change, she addresses her request to the SSLT in order to establish if this contribution to the interaction is applicable. From the GSLT's request, the SSLT acknowledges and agrees in the following turn, enabling the fulfilment of the initial request to go ahead.

The initial requests within the extended sequences from the SSLT project a course of action over an extended sequence of talk. This was observed to occur across different medical tasks and though sequenced in different ways, for example as stand-alone request turns or following a pre-sequence/contingency of difficulty in enacting action on behalf of the recipient, they all function to initiate a course of action over the extended sequence. Within the context of telemedicine videoconferencing, the SSLT through projecting the course of action sets up what is required in order to fulfil the medical task. This allows the SSLT to direct or 'orchestrate' the courses of actions which are then taken up by the patient and GSLT in their fulfilment. From the initial request, the GSLT has been observed to facilitate request making through clarifying action components for the patient and allowing for the continuing fulfilment of the request. The initial requests were also framed as collaborative endeavours through the use of the plural pronoun *"we"* which will now be further explored as a pervasive feature of the initial requests.

4.2.1 Initial Requests projecting a course of action as a collaborative endeavour

Initial requests projecting courses of action were designed as collaborative endeavours between the participants. This was achieved through the use of the plural pronoun "*we"* which was implemented across the majority of initial requests (13/20) and can also been observed in

the extracts within the previous section, however other examples will be drawn upon to further demonstrate the interactional relevance of this pronoun.

The plural pronoun *'we'* has been identified as being inclusive as well as exclusive, demonstrating participant alignment with courses of action (Scheibman, 2004). Within the following examples, the use of this plural pronoun frames the course of action as a collaborative endeavour between all participants (the SSLT, GSLT and patient) as well as the SSLT aligning herself with the GSLT in undertaking courses of action with the patient as the recipient. Functionally, the use of this design frames the upcoming fulfilment of the initial request as a collaborative endeavour, achieved over a sequence of talk between the participants. From this, consideration is also given to examples whereby the SSLT implements the plural pronoun but shifts the proposed collaborative endeavour during her turn at talk, redesigning her turn at talk when she is unable to fulfil the proposed collaborative request.

With the extract below, the SSLT implements a request to examine the patients tongue. We can observe the implementation of the modal verb with the plural pronoun "can we", which displays more entitlement to make the request, rather than through the use of other request designs such as 'I wonder if' (Curl & Drew, 2008). The SSLT aligns herself with the GSLT- L in observing the patient's tongue, before uttering a request component towards the GSLT-L about whether she has torch available towards the end of her utterance.

Extract 5- collaborative observation (16) <00.44.27>

1	SSLT	its its it ye know its its completely understandable [don] ye know
2	P	[hmm]
3		lets have a look at {your can we have a {look at {your tongue n
4	P	***{nods***
5	GSLT-L	***{nods***
6	SSLT	***{raises hands to side of mouth***
7		***{lowers hands***
8		everything and {see how its{{looking have you got a torch there {luce?
9	SSLT	***{moves closer to VC equipment***
10	SSLT	***{raises right hand to mouth {lowers hand***

The extract begins with the SSLT acknowledging a previous sequence of talk oriented towards Donna, the patient "*its its it ye know its completely understandable Don"* (line 1) which is acknowledged by the patient and GSLT-L through their embodied acknowledgments of nodding following the SSLT's acknowledgment (line 4 and 5). From this, the SSLT re-

orients her turn at talk, uttering her request which is redesigned from a declarative ("*let's have a look* at") to an interrogative (*"can we have a look at"*) functioning to elicit permission from the patient whilst framing the request as a collaborative endeavour (lines 3). Through this, the SSLT aligns herself with the GSLT-L in observing the patient's tongue. At the transitive verb "look" the SSLT raises her hands to either side of her mouth before uttering the location of action, functioning to provide location relevant information for the requested course of action. The SSLT then proceeds to lower her hands as she continues with her verbal request "*can we have a look at your tongue n everything n see how its looking" (lines 3-8).* The SSLT moves closer towards the VC equipment simultaneously with "see", demonstrating her engagement in the requested action. The SSLT then proceeds to raise her right hand during her utterance at "looking" (line 8), demonstrating the location of action through this iconic gesture to signify the action of the SSLT and GSLT-L in "looking". The SSLT then re-orients her request to Lucy, the GSLT-L enquiring if she has a torch, necessary for the fulfilment of the initial request of examining the tongue. Towards the end of her turn, the SSLT lowers her hand, indicating to the recipients a completion of her turn at talk.

Within this extract, we can observe the SSLT frame the requested action as a proposed collaborative endeavour through employing "can we", redesigning her utterance from a declarative to an interrogative. Through this, the SSLT uses 'we' as an inclusive term aligning herself with the GSLT, concerning observing the patient enacting a requested course of action. Specifically the use of "can we" in these instances, allows the SSLT to elicit permission from the patient to undertake actions, whilst also obtaining acknowledgement of the patient engaging in a course of action.

The use of 'we' with videoconferencing allows the SSLT to include herself as an active participant in the proposed collaborative fulfilment of initial requests. Through implementing 'we' to align herself with the GSLT, the SSLT is able to narrate the specific courses of action of the patient and herself and the GSLT as a group in the fulfilment of the request (Scheibman, 2004). With the SSLT aligning herself with the GSLT, she also frames the GSLT as equal in the fulfilment of the initial request suggesting the need for the GSLT to perform the requested actions due to the restrictions of the videoconferencing equipment.

The SSLT also proposes actions whereby 'we' is inclusive to all participants in the collaborative fulfilment of the SSLT's request. The shifting in the inclusive and exclusive use of 'we' allows the SSLT to align herself to certain courses of action whilst keeping the proposed

collaborative endeavour clear to all the participants. What the use of the plural pronoun also allows is the SSLT to include herself as part of a collaborative endeavour in which, due to interactional restraints of the VC equipment, she is unable to achieve. Examples of this are given below.

The following extract concerns an initial request from the SSLT to assess the patient's swallowing ability and is framed as a collective action of observing the patient drinking.

Extract 6 – switching pronouns and the technology (4) <00.17.00>

1	SSLT:	RIgh:t what about the drink:s{t:hen shall we see we've got it
2	GSLT-L	***{turns gaze to P***
3	SSLT	er are you willing to have a try with us it could be
4		{mes↑sy we don't m↑ind {(.)[well i don't mind]{huhuhu
5	SSLT	***{raises hands out flat towards VC equipment***
6	GSLT-L	***{turns gaze to SSLT, back to P***
7	SSLT	***{retracts hands {leans back in chair slightly***

Within this extract, the SSLT first states the unspecified course of action regarding the use of drinks, related to examining the patient's swallow however not specified during the SSLT's utterance "*right what about the drinks then" (line 1).* This is then framed as a collaborative endeavour not just through the plural pronoun "*we" "shall we see"* (line 1), but also through seeking the patient's acceptance of attempting the actions with the SSLT and GSLT-L through the use of *"us" "are you willing to have a try with us"* (line 3*)*. Here, the SSLT first uses *'we'* as part of the inclusive utterance, including all the participants in the proposed collaborative endeavour. From this, the SSLT aligns herself with the GSLT-L "*are you willing to try with us*" (line 3) proposing the interrogative to the patient. This alignment with the GSLT-L from the SSLT functions to elicit a response to the request from the patient as a proposed collaborative endeavour towards its fulfilment. As the SSLT continues her request, she utters a potential contingency in the fulfilment of the request *"it could be messy*" (line 3-4) as she raises her hands out flat towards the VC equipment simultaneously with rising intonation on "messy" (line 5). From this, the SSLT produces a declarative aligning herself with the GSLT-L and informing the patient through her utterance that getting messy in the fulfilment of the request would be unproblematic *"we don't mind"* (line 4). Following this, the SSLT retracts her hands from the VC equipment (line 7) as she continues her turn at talk, switching from the plural pronoun '*we'* to the personal pronoun '*I*' "*well I don't mind*" (line 5)

followed by short laughter (line 4) as she leans back slightly in her chair (line 7). This switch in pronouns brings out the medium of videoconferencing within the interaction, informing the patient and GSLT-L that getting messy in the fulfilment of the request is unproblematic for the SSLT, rather than both the GSLT-L and SSLT, as she disengages from the VC equipment, retracting her hands and leaning back in her chair towards the end of her initial request. This reminds us of the medium of videoconferencing within the interaction and the SSLT being present on her own at one end which is why the SSLT doesn't mind getting messy as she isn't physically present with the patient and GSLT. The addition of laughter at the end of her utterance, invites the recipient to also engage in laughter as a response and frames the switch in alignment as a result of the trouble in fulfilling the request in a light-hearted way (Jefferson, 1984).

These switches from a collaborative request between all participants to an alignment with the GSLT and finally to an individual position demonstrate how the SSLT shifts alignment in the proposed collaborative fulfilment of the initial request. Within this extract, the shift in pronouns also reminds us of the medium of videoconferencing as facilitating the interaction. With this, the SSLT switching in pronouns brings out that the possibility of getting messy in the fulfilment of the request is unproblematic for her given she is not physically present with the patient and GSLT.

Within the following extract, the SSLT utters her initial request to check how much the patient can open their mouth, framed as collaborative endeavour inclusive to the GSLT-L and SSLT *"can we check how much you can open your mouth"*. This is then further specified from the SSLT, as she upgrades her request to *"how wide you can open your mouth*", providing further detail regarding the preferred response of the patient opening their mouth wide.

Extract 7- the switch in collaboration and task (4) <00.14.24>

1	SSLT	ok n can we check how {much you can open your mout:h
2	SSLT	***{directs gaze away from VC Equipment***
3	SSLT	how w-wide you can {open your mouth
4	SSLT	***{directs gaze towards VC equipment***
5	P	***Opens mouth***

6	SSLT	{right have you got that measurer Luce (.)
7	GSLT-L	***{moves head and gaze round to patient's right side, then back to left***

During her initial request, the SSLT redirects her gaze away from the VC equipment (line 2), reengaging towards the end of her turn as she redirects her gaze back (line 4). Following her request, the patient responds by opening their mouth towards the SSLT (Line 5). Having redirected her gaze in the prior turn, the SSLT acknowledges this "*right"* (line 6) before uttering an additional request, oriented towards Lucy (GSLT-L) regarding having a measurer "*have you got that measurer Luce"* (line 6) in order to take the patient's mouth opening measurement. Within this extract, the SSLT first frames the checking of the patient's mouth as a collaborative endeavour. As the patient responds in the following turn, the SSLT utters her request towards the GSLT to have a measurer present. The two request components, though occurring in separate turns, are both required for the fulfilment of the initial request to check the patient's mouth opening. Through the SSLT switching to GSLT-Lucy, she demonstrates that whilst the patient has fulfilled the initial request of opening their mouth for the SSLT and GSLT-L to check, she is unable to achieve the physical task of measuring how wide the patient can open her mouth, which through her switch, she delegates to the GSLT-L.

A further example of the SSLT being unable to deliver her own proposed collaborative request can be observed within the following extract where a neuromotor assessment is being conducted. In contrast to previous extracts, the following example shows the SSLT acknowledging the difficulty in her fulfilling her proposed collaborative request rather than switching between pronouns. The SSLT first initiates a request to examine the patient's muscles, with the location of the muscles being made apparent through the SSLT's pointing gesture occurring simultaneously with her verbal utterance "muscles" (line 2). This is followed by the SSLT commenting on the difficulty for her to fulfil her own request due to her lack of perspective *"I'm not sure if I'll be able to see Mitchel's palate Wendy*" (lines 3). The SSLT then produces her declarative regarding a previous assessment of the patient's palette being asymmetric following treatment (line 4) providing relevant information for the GSLT-L enabling the fulfilment of the request to look at the patient's palate. The SSLT then proceeds to utter her request as a proposed collaborative endeavour for a neuromotor test using the plural pronoun "we" (lines 6-10). Though framed as a collaborative endeavour, the enacting of the neuromotor test is undertaken within the consultations by the GSLT, as demonstrated in the following extract.

Extract 8- acknowledging difficulty in fulfilment (14) <00.09.18>

1	SSLT	so let's have a little look at all the {muscles and stuff im
2	SSLT	***{points to mouth***
3	SSLT	not sure if i'll be able to see Mitchel's (.) palate Wendy
4	SSLT	{but erm (Martha's) noted that it's a bit a- asymmetric erm at
5	SSLT	***{turns gaze to notes on table and lowers hand***
6	SSLT	the end of treatment {er::m but [yeah perhaps we could do a]=
7	SSLT	***{turns gaze to VC equipment***
8	GSLT-W	{[(so we'll just start by do]
9	P	***{turns gaze from SSLT to GSLT-W***
10	SSLT	=neuromotor
11	GSLT-W	d- ou:::o
12	P	Ou::o
13	GSLT-W	E::e
14	P	E::::e
15	GSLT-W	A::a
16	P	{A:::a
17	P	***{opens mouth wide***
18	GSLT-W	is that as {wide as you can open your mouth?
19	GSLT-W	***{points to mouth***
20	P	***Nods***

This example demonstrates how the SSLT acknowledges the inability of fulfilling her initial request within her turn at talk to examine the patient's palate. She specifically orients her difficulty in this fulfilment to Wendy, the GSLT-W, informing the GSLT-W of her inability in fulfilling the requested component. From this, the SSLT frames her request for a neuromotor assessment as a proposed collaborative endeavour using the plural pronoun 'we'. Though the plural pronoun is implemented, the neuromotor test is enacted by the GSLT-W in the following turns at talk, facilitating the fulfilment of the SSLT's initial request.

Within these examples, we can observe the use of the plural pronoun *"we"* serving the function of framing the initial request in the extended sequence as a proposed collaborative endeavour. The SSLT through this plural pronoun, includes herself in certain courses of action, aligning herself with either the GSLT and specifying a different course of action to the patient, or to both the patient and GSLT. We can also observe the use of "*we"* functioning to include the SSLT as being an active participant over the extended sequence, even with initial requests that she is unable to fulfil given her location at a different site. For example, obtaining the patients mouth opening measurement (extract 12) can only be achieved over the extended sequence from the GSLT given their physical proximity to the patient. The inclusion of the plural pronoun with initial requests then, allows the SSLT to align herself with courses of action

(Schiebman, 2004) that within the interaction can only be fulfilled by the GSLT and patient given their proximity to one another. What this also achieves, is including the GSLT and patient as equal in the fulfilment of the request however as previously stated, the GSLT plays an essential role in physically fulfilling the requested action components.

4.2.2 Eliciting the Preferred Response: Quoting and Adding Additional Information through Embodied Actions in initial requests

In the extended sequence of initial requests, the SSLT was found to draw on a variety of embodied actions which functioned to elicit the preferred response to the request. This occurred through embodied actions quoting components of the verbal request, demonstrating action components directed at the patient and GSLT as well as serving to provide additional information for the recipients. Embodied actions have been found to be sequenced with verbal utterances, in which the different semiotic resources mutually elaborate one another. (Kendon, 1997; Goodwin & Goodwin, 2004). The embodied actions drawn on by the SSLT with initial requests included, pointing gestures to various locations around the neck and mouth as well as towards other interlocutors, massaging the jaw, moving the tongue, pinching gestures, hand gestures around the neck and mouth as well as more generic gestures such as raising and lowering the hands.

In the following extract, the SSLT employs embodied actions with her request for the patient to try some water in order to conduct a swallow test. The embodied actions employed with her request utterance function to quote action components associated with the request.

Extract 9- gestures in detailing action components (14) <00.17.48>

1	SSLT	Hehehe {.hhh thank you very much {what we'll do is >we'll
2	P	***{Gaze directed away {gaze directed SSLT***
3	SSLT	try to try< some {water .hhh im gonna ask you to just
4	SSLT	***{Turns towards P from consulting notes***
5	SSLT	(.) drink {it dow:n
6	SSLT	***{Raises hand***
7	SSLT	***Circular hand gesture (1.9) (fig 4.2)***
8	SSLT	in one go as comfortably as you can {alri↑ght with
9	SSLT	***[Lowers hand***

```
10    SSLT   {a {hundred mills (.) n what {wendy
11    SSLT      {raises hand with 'pinching gesture' (fig 4.3)
12                                        {slight hand Gesture towards
                                          VC
                                          Equipment
13    P      {Nods
14    SSLT   will do is {she'll (.){count your {swallows .hh
15    P                 {directs gaze to W, back to SSLT
16    SSLT                                    {Circular
                                              hand gesture
                                              ↑speed
17    GSLT-                          {Returns on screen sits
      W                              Down
18    SSLT   (.) and {{im gonna {time you mkay
19    SSLT           {Gestures to self
20    SSLT                      {circular hand gesture
21    GSLT-          {pours water into glass
      W
22    P      Directs gaze to W
```

In line 1, the SSLT first acknowledges the patient's completion of a previous task "*thank you very much"* before proceeding in to the extended request sequence. At this point, the SSLT simultaneously re-orients her body towards the patient, as she begins her request utterance "*what we'll do is we'll try to try some water"* (line 1-3) framed as a collaborative endeavour. The SSLT then proceeds to declare the action components with the request and the individual's role in their enactment with the patient drinking the water (line 5). Consisting of Wendy, the GSLT-W counting the patient's swallows (Lines 10-14) with the SSLT timing (line 18). As the SSLT utters the patient's actions, she raises her hand and implements a circular hand gesture (Line 7, Fig 4.2) oriented towards the patient following uttering the required actions "*drink it down"* (line 5). This action functions to quote the previously uttered request of drinking, occupying a separate TCU during the SSLT's initial request. The SSLT then proceeds to detail the enacting of the request component for the patient, that of drinking it "*in one go as comfortably as you can"* (line 8) followed by seeking the patients permission "*alright*" (line 8) as she lowers her hand. The patient responds non-verbally through nodding (line 13) as the SSLT continues with her request, further specifying the amount of water "with a hundred mills." At this point, she raises her hand with a pinching gesture, indicating a small amount of liquid. The SSLT then re-orients to declare the actions that Wendy will fulfil; counting the patient's swallows. The SSLT gestures towards the VC equipment simultaneously

as she produces the GSLT's name, supporting her verbal utterance as directing theGSLT-W's actions, even though the GSLT-W was not currently visible in the VC view. As the SSLT continues to utter the actions of Wendy, (GSLT-W) the patient redirects his gaze brieflyto the GSLT-W (line 15) as Wendy returns to the room having got some water for the swallow test, before redirecting his gaze to the SSLT. The SSLT increases the speed of her movement with her circular hand gesture as she finishes declaring the actions of the GSLT-W "*She'll count your swallows"* (line 10-14). From this, the SSLT then proceeds to declare her actions in the fulfilment of the request sequence "*and I'm gonna time you"* (line 18). The SSLT gestures to herself on uttering "I'm" and implements a further circular hand gesture with her action component of timing the patient. Over the course of this request utterance, the SSLT's embodied actions function to quote aspects of the preferred response with the initial request in order to construct a coherent course of action between the participants (Keevallik, 2010). With this, the SSLT draws on iconic gestures to depict the content of the speech, in this case her request (McNeil, 1992). Whilst also quoting aspects of the request, her embodied actions here also allow her to portray additional information that could not be achieved through her verbal utterance alone. This functions to further elicit the preferred response from the recipients in the actions required for the fulfilment of the request.

Figure 4.2 SSLTs circular hand gesture

Figure 4.3 SSLTs pinching gesture

In the following extract, the SSLT requests a lip seal test from the patient. Similarly, to the previous extract, the embodied actions employed in the utterance function to quote different action components associated with the request, in this instance the patient puffing up her cheeks followed by them being popped to test her lip seal.

Extract 10- demonstrating location relevant information (4) <00.13.49>

1	SSLT:	.hhh can you erm hows your {lip seal can you {pu:
2	SSLT	{*Moves hand by side of mouth* {*Stops Hand by face*
3	SSLT:	{{put your lip:s together {puff up your cheeks and
4	GSLT-L	{*Directs gaze from SSLT to P*
5	SSLT	{*Moves hand to mouth* {*open and close hand gesture by mouth*
6	SSLT:	donnas gonna try n {pop yer pop yer lips have a
7	SSLT	{**Open and close hand gesture by Mouth**

8 SSLT: {go {at that

9 SSLT {***Moves hand towards screen***

10 P: ***{Closes lips, attempts to blow cheeks up***

11 SSLT: {can you check lip se↑al

12 SSLT ***{Closes and draws hand back***

13 P ***Attempts to blow up cheeks***

14 GSLT-L ***Blows cheeks up***

15 SSLT: can you blow up your c↑heeks

16 P **Attempts to blow cheeks up**

17 SSLT **Blows cheeks up**

17 SSLT: like thi[s

19 SSLT ***Blows cheeks up***

20 SSLT ***Raises hands to each side of face***

21 GSLT-L {[can you blo:blow them up

22 P ***{Attempts to blow cheeks up***

23 GSLT-L ***Raises fingers to cheeks, Blows cheeks up And lowers hand***

24 SSLT n lucy can you {see {can you check resis[t↑ance

25 P **{Pokes cheeks with hands and lowers Hands**

26 GSLT-L ***{Raises fingers to cheeks And lowers hand***

27 P: [°its not there°

28 GSLT-L ***Directs gaze to SLT***

29 SSLT: can you do this {pfft {try n burst it {pfft

→ 30 SSLT ***{Blows cheeks up bursts with hands*** ***{blows cheeks up bursts with hands***

31 P **[Blows up cheeks, Pokes cheeks and lowers hands**

32 SSLT: can you do th↑at

33 SSLT ***Lowers hands from face in open gesture Towards P and L***

34	SSLT	So {if {donna you blow up your cheeks {lucy {you try n
35	SSLT	***{raises hands to cheeks {moves hands forwards from cheeks, Returns hands to cheeks***
36	P	***{pokes cheeks with index ger {moves fingers from cheeks, Shakes head***
37	P	***Attempts to blow cheeks up***
38	GSLT-L	***Turns head towards SSLT***
39	SSLT	{[if you do this luce]
40	SSLT	***{moves hands outwards from cheeks***
41	GSLT-L	{[d'you want me to] {point [yeah]
42	GSLT-L	***{raises hands with index fingers pointing out***
43	GSLT-L	***{turns and places torch on table, turns back to Patient***
44	SSLT	{[yes][please {A↑haha]
45	P	[( )]
46	SSLT	***{moves hands to cheeks***
47	SSLT	***{lowers hands***
48	GSLT-L	{if {[you {lock yo:ur your teeth then {(.) yep
49		***{raises hands to own mouth, clasping gesture [moves hands to patient's cheeks***
50	P	***{turns more to GSLT-L {blows cheeks up***
51	GSLT-L	***Pushes in on patient's cheeks***
52	P	***Slight shake of head***
53	GSLT	[ok]
54	SSLT	[can] you fill them up with [air]?
55	SSLT	***Blows cheeks up, releases***
56	GSLT-L	{[im] not hurting you

57	GSLT-L	***{moves hands from patient's cheeks***
58	P	***Blows cheeks up, Shakes head***
59	GSLT-L	***Moves hands to patient's cheeks, pushes in three times***
60	SSLT	[hows that]
61	GSLT-L	[OH a little]bit
62	SSLT	That's alright
63	P	**{**a tiny bit °that time°
64	P	***{turns gaze to SSLT***
65	GSLT-L	***{turns gaze to SSLT***
66	GSLT-L	[a tin:y bit]
67	SSLT	[thats not]**{**t↑oo bad [thats not too bad]
68	GSLT-L	***{raises hand in clasping gesture, lowers hand***
69	GSLT-L	**{**[yeah **{**more on this][side]
70	GSLT-L	***{turns gaze to patient {points to patient's right cheek***
71	GSLT-L	**{**than on this side
72	GSLT-L	***{points to patients left Cheek and lowers hand***
73	P	[hmm]
74	P	***{directs gaze away, blows cheeks up***
75	SSLT	**{**yeah okay that's alright
76	P	***{raises hand open and gently slaps face***
77	P	**{**Nope can't get em
78	P	***{lowers hands***
79	SSLT	Okay

In line 1 the SSLT begins her request utterance initially redesigning her utterance from "*can you"* to "*how's your lip seal"*, framing the interrogative as a request for information rather than a request for an action. As she utters *"lip seal"* the SSLT raises her hand to the side of her mouth, holding her hand by her face, demonstrating to the patient the location for the proposed course of action. The SSLT then proceeds to unpack the action components in fulfilling the requested action. This begins with an initial request to the patient "*can you put your lips together"* (lines 1-3) whereby the SSLT re-orients her hand from the side of her mouth to in front of her mouth at the beginning of her utterance, emphasising the location through her non-verbal actions. From this, she continues to unpack the action components "puff up your cheeks" which is accompanied by an open and close hand gesture by the SSLT's mouth at "*puff"* emphasising the action through her non-verbal display. From this, the SSLT re-orients her talk to the actions of Donna, the patient, who is going to attempt to pop the patient's cheeks. The action of popping was oriented to Lucy, the GSLT-L and was an error on the part of the SSLT during her verbal utterance in naming the patient instead. As the SSLT utters "pop", she includes a similar open and close hand gesture to the side of her mouth, rather than from the front of her mouth, as seen in the previous embodied action.

With this extract, consideration will be given to how the fulfilment of the initial request is undertaken. This is due to this extract showing the difficulty that occurs in fulfilling the requested action with videoconferencing and the role of the GSLT in request making and facilitating the fulfilment of the request.

From the SSLT's initial explicit request (lines 1-8) for the lip seal test, the patient responds attempting to fulfil the request by blowing up her cheeks (line 10). The SSLT then produces her interrogative without specifically orienting to either the patient or GSLT-L *"can you check lip seal"* (Line 11). In the following turns, the patient continues attempting to fulfil the request through her actions (Lines 13, 16, 22), as the SSLT produces a further interrogative oriented towards the patient who is attempting to fulfil the initial request component *"can you blow up your cheeks*" (line 15) as she proceeds to demonstrate the preferred action for the patient (lines 17, 19) Similarly, the GSLT-L begins to engage in demonstrating the preferred response to the patient (Line 21) before repeating a truncated version of the SSLT's interrogative "*can you blow them up*" (Line 23) as she further demonstrates the preferred response (Line 26). Through this, the GSLT-L demonstrates her understanding of the action component of blowing up the cheeks with the initial explicit request being oriented towards the patient.

As the sequence continues, the SSLT self-selects with her interrogative oriented towards the GSLT-L, as she recruits her assistance in fulfilling the initial request "*n Lucy can you see can you check resistance*" (Line 24). Through adding the GSLT-L's name, the SSLT explicitly requests the action component to be fulfilled by the GSLT-L. However, during her utterance, the patient and GSLT-L are engaged in the course of action towards the fulfilment of the initial request as the GSLT-L continues demonstrating the preferred outcome (Line 26). Following this, the patient self-selects demonstrating trouble in the fulfilment of the initial request "*it's not there*" (line 27) as the GSLT-L re-orients her gaze to the SSLT following her previous utterance (line 28). Upon gaining the attention of the GSLT-L, the SSLT produces an imperative demonstrating to the GSLT-L the preferred actions for the fulfilment of the request as she blows her cheeks up and bursts them with her hands (line 29, 30). However, this is not acknowledged by the GSLT-L in the following turn. Meanwhile, the patient is still engaged in actions which attempt the fulfilment of the initial request (Line 31). The SSLT holds the communicative floor with her interrogative "*can you do that*" (Line 32) followed by her imperative declaring the actions of the patient and the GSLT-L during her incomplete turn at talk *"so if Donna you blow up your cheeks Lucy you try n*" (Line 34). The SSLT employs a further explicit request here in detailing the action components in the fulfilment of the initial request. The patient continues towards the fulfilment of the initial request as she moves her hands to her cheeks and attempts to break the lip seal, before shaking her head, demonstrating trouble in the fulfilment of the initial request (line 36). From this, the GSLT-L orients to the SSLT as the SSLT self-selects with her imperative (Line 39) which occurs in overlapping talk with the GSLT-L who produces an interrogative, clarifying her actions in the fulfilment of the initial request and producing an acknowledgement token towards the end of her utterance (Line 41). During her utterance, the GSLT-L places the torch on the table to her left and re-orients to the patient (Line 43). The SSLT produces an acknowledgement token in the following turn to the GSLT-L's interrogative (Line 44) having established the actions of the GSLT in facilitating the initial request. At this point, the SSLT, following employing explicit requests detailing the action component of the GSLT, has recruited the GSLT to grant the fulfilment of the initial request of checking the patient's lip seal through checking to see if there is resistance, through pushing on either side of the patient's cheeks. The GSLT takes the communicative floor and produces an imperative oriented towards the patient to lock her teeth (Line 48). During her utterance, the GSLT-L raises her hand to her mouth in a clasping gesture as she produces her imperative, before moving her hands towards the patient's cheeks (Line 49). Meanwhile, the patient turns her body towards the GSLT-L, blowing her cheeks up (Line 50). Both the GSLT-

L and patient here, continue with the ongoing fulfilment of the initial request in the extended sequence as the GSLT-L pushes in on the patient's cheeks (Line 51), checking the resistance as the patient shakes her head, still demonstrating the trouble in her actions fulfilling the initial request (Line 52).

Within the final part of this sequence, the GSLT-L produces an acknowledgement token regarding the ongoing fulfilment of the initial request (line 53) the SSLT interjects with her interrogative oriented towards the patient if she is able to perform the preferred response of filling her cheeks up with air (Line 54) which she demonstrates in the following turn (Line 55). The GSLT-L self-selects in overlapping talk towards the end of the SSLT's utterance, checking in with the patient to establish she isn't in pain during the fulfilment (Line 56) as she moves her hands from the patient's cheeks (Line 57). The patient responds in the following as she blows her cheeks up, and shakes her head indicating that she isn't experiencing any pain. The GSLT-L moves her hands back to the patient's cheeks, pushing in three times checking for resistance (Line 59). The SSLT produces her interrogative functioning to achieve the fulfilment of the request (Line 60). The GSLT-L responds in overlapping talk with her declarative "*OH a little bit*" (Line 61). This is acknowledged by the SSLT in the following turn (Line 62) followed by the patient demonstrating progression "*a tiny bit that time*" (Line 63). This is repeated by the GSLT-L in the following turn (Line 66) as she provides elaboration in overlapping talk with the SSLT's acknowledgement utterance regarding more resistance occurring on the right side of the patient's mouth in comparison to the left (Line 69-71).

This extract first demonstrated how the SSLT's embodied actions functioned to quote components of the requested course of action and portray additional non-verbal information associated with the preferred response to the request, such as location relevant information. From this, the fulfilment of the request was examined considering the embodied actions employed by the SSLT and GSLT in fulfilling the request. This extract further emphasises the integral role of the GSLT in granting the fulfilment of the initial explicit request within extended sequences. Following the SSLT implementing further explicit requests detailing the action components required of the GSLT-L, she establishes the actions required for its fulfilment following the GSLT-L redirecting her gaze, allowing the GSLT-L to enact the requested components of the initial request, in this case checking the resistance through popping the patient's cheeks, before granting the request by providing the outcome of the patient's actions within the sequence. Within this extract, the SSLT's explicit requests are not

attended to by the GSLT-L in the interaction due to the GSLT-L attempting to facilitate the fulfilment of the patient's action component of blowing up their cheeks. The GSLT-L demonstrates her understanding of her required action components in the fulfilment of the explicit request through obtaining clarification and proceeding with the fulfilment of the initial request. The fulfilment of the request is achieved as a collaborative endeavour, with the patient attempting to enact the actions throughout this sequence as the GSLT and SSLT attempt to demonstrate the preferred response to the request. The integral role of the GSLT in enacting the explicit request and facilitating its fulfilment is illustrated through her embodied actions which allow the request to be granted, allowing for the continuation of the consultation.

The initial request sequences in the extended sequence were observed to function as projecting the course of action to the recipients in achieving its fulfilment. Through framing the initial request as a collaborative endeavour, the SSLT includes herself in the projected course of action as well as projecting the action components required for its fulfilment. In conjunction, the collaborative endeavour includes the GSLT and patient as equal in the fulfilment of the request, however as has been demonstrated, the GSLT plays a crucial role in facilitating the request making through clarifying action components for the patient whilst facilitating the fulfilment of the request through physically enacting action components. With the SSLTs initial request, the employment of embodied actions demonstrates to participants the preferred response in fulfilling the proposed course of action, in order to achieve medical tasks in physical examinations.

4.3 The Fulfilment of Initial Requests within Extended Sequences

So far, consideration has been given to the initial request within the extended sequence and how the initial request projects a course of action. A collection of these initial requests were framed as collaborative endeavours through the plural pronoun *'we'* which included the SSLT in the course of action. With framing the course of action as a collaborative endeavour, we also observed means by which the SSLT switched between pronoun use with collaborative requests she was unable to deliver. With this, the embodied actions that accompanied the initial requests were observed to function to elicit the preferred response from the participants through quoting and providing additional information. Finally, we have begun to consider the role of the GSLT in facilitating request making through repairing and upgrading initial request

components as well as how the GSLT responds to implicit and explicit requests, demonstrating understanding of her role in the fulfilment of medical tasks.

The following section examines the fulfilment of the initial request within the extended sequences and how this is undertaken by the participants to achieve medical tasks. When examining the fulfilment of the initial request within extended sequences, research by Rauniomaa & Keisanen (2012) is utilised as a lens in which to understand this. The authors identify two means by which individuals favourably respond to requests in co-present interactions, consisting of acceptance and fulfilment and only fulfilment without the initial component of acceptance (Rauniomaa & Keisanen, 2012). The following section demonstrates how similar formats of responding are drawn upon when using video-conferencing, demonstrating that participants draw on similar formats with ongoing courses of action when in separate environments. In addition, what this analysis demonstrates is that though the same formats of responding are drawn upon in video-mediated interaction, the GSLT is an essential participant in the fulfilment of requests and enacting medical tasks.

With these points in mind, consideration is first given to actions of incipient fulfilment, which make the actual fulfilment of requests possible (Rauniomaa & Keisanen, 2012) and are considered in facilitating the fulfilment of the initial requests, specifically considering making objects relevant and bodily positioning of the participants. Secondly, the formats of fulfilling initial requests within extended sequences are examined, consisting of the immediate extended fulfilment of requests and accepting and fulfilling requests.

4.3.1 Actions of Incipient Fulfilment: Making Fulfilment Possible

Within the extended request sequences, fulfilment of initial requests within extended sequences were found to be prefaced by actions of incipient fulfilment; actions which make the fulfilment of the request possible (Rauniomaa & Keisanen, 2012). These concern preparatory actions, which were characterised by making objects within the environment relevant and bodily positioning of the patient and GSLT in achieving the fulfilment of the initial request from the SSLT. These actions demonstrate the advancing of the interactional agenda towards the fulfilment of the initial request within the extended sequence.

4.3.1.1 Making Objects Relevant

The first collection considered here concern preparing equipment and making objects relevant in the environment (3/20). Within this collection, the GSLT and patient prepare and make relevant material objects which are required for the fulfilment of initial requests in the extended sequence, and are therefore relevant to the ongoing activities (Keisanen & Rauniomaa, 2012). Objects are mobilised within the local environment and are embedded within the activities associated with the initial request gaining their significance within the interaction as relevant for the fulfilment of the SSLT's initial requests (Hindmarsh & Heath, 2000).

For example, Extract 11 below displays an extended request sequence to examine and obtain the patient's mouth opening measurement. Throughout the extract we can observe the actions of incipient fulfilment of the GSLT-L in facilitating the continuing fulfilment of the initial request, demarcated by arrows to the side of the extract. The extract shows the initial request oriented towards the patient (lines 1-6) which is responded to by the patient through his embodied action of opening his mouth (line 9). The SSLT then utters a request oriented towards the GSLT-L in line 10 following acknowledgement of the patient's mouth opening "*ok that looks ok have you got a measurer there Luce"*. This is responded to by the GSLT-L following an interjection from the patient (line 11) as she instigates the process of obtaining the measurer *"erm yeah let me get (.) one"* (line 18).

Extract 11- the use of binder in preparation (5) <00.19.10>

```
1     GSLT:  [oh ju]de [wa]nts one as[well]
2     SSLT:  [yeah]    [ok]          [yeah]ok n er:m {what about
3     SSLT                                          {Raises hand and
                                                     Points to
                                                   mouth (fig 1)
4     SSLT   your mouth {opening is your mouth opening ok↑ay any {stiffness
5     SSLT              {Brings fingers                          {Moves R hand
                        In front of mouth                       to either side
                        'pinching gesture'                      of jaw
6     SSLT   in your j↑aw (.) does it {open wi↑de
7     GSLT   Directs gaze to p
8     SSLT                           {Moves hand in front of mouth drops
```

		hand keeping hand straight
9	P	***gaze directed towards SSLT, raises hand to neck, opens mouth wide,***
10	SSLT	ok that looks ok have you got a [measurement there] Luce
11	P	[though{it is a bit] it is a
12	P	{bit stiff round here
13	P	***{raises hands to side of face***
14	P	***{rubs side of Face***
15	SSLT	***Nods***
16	SSLT	Yeah
17	P	***Opens mouth wide with hands either side of jaw***
18	GSLT-L	Erm{yeah let me get(.)one
19	GSLT-L	***{re-orients body to table behind, moves objects off binder***
20	SSLT	Let's have a little measure {of how{how it's doing
21	GSLT-L	***{turns body and gaze to table,***
22	P	***{gaze directed at SSLT, re-oriented to GSLT***
23	SSLT	***Picks up binder, re-orients body to VC equipment and places binder on lap***
24	P	***Re-orients gaze to SSLT***
25	SSLT	Let's have a look {ill write that down now so it was {fine{before treatment{wasn't it
→ 26	SSLT	***{opens binder, flicks through pages***
27	P	***{re-orients gaze to GSLT-L***
28	P	***{turns gaze to SSLT***
29	GSLT-L	***{places binder on lap***
→ 30	GSLT-L	***Opens binder, flicks through opening pages***
31	SSLT	{it [mea]sured a::t i think Gemma would have measured {i:t
32	SSLT	***{flicks through pages, gaze directed downwards {stops Flicking***
33	P	[yep]

34		(1.6)
35	SSLT	{A:t
36	P	***{turns gaze to GSLT-L***
37	GSLT-L	***Removes paper from folder in binder containing measuring device, closers binder***
38		(1.2)
39	SSLT	{°i can't see it°
40	P	***{turns gaze to SSLT***
41		(2.4)
42	SSLT	{forty nine millimetres before {it was {before you started
43	GSLT-L	***{removes measuring device from paper***
44	SSLT	***{brings gaze to VC equipment***
45	SSLT	***{brings gaze down to binder***
46	SSLT	{let's have a little compare but {yeah those jaw stretches are
47	P	***{turns gaze to GSLT-L {turns gaze to SSLT***
48	SSLT	good {for tryin cause {this is one area that does
49	SSLT	***{raises hand to jaw {brings hand to side of jaw***
50	GSLT-L	***{turns and places template sheet and binder on table***
51	SSLT	*really {stiffin so yeah [keep {rigglin that jaw*
52	SSLT	*{alternates hand to other side of jaw*
53	SSLT	***{wriggles jaw slightly***
54	GSLT-L	***{turns back towards VC equipment, stands up from chair***
55	P	***{directs gaze downwards, re orients to GSLT***
56	SSLT	***Lowers hand from jaw and turns gaze down towards notes***
57	SLT	*{Lets have a comparison then*
58	SLT	***{gaze directed down at notes***
59	GSLT-L	***{moving across screen to other side of patient with measurer in hand***
60	S	*[Line]omitted*

61	L	***{****[right]*
62	SLT	***{directs gaze up at VC equipment, back down to notes***
63	L	*(you're okay)]There we are that's fine*
64	SLT	*[what is it now]*
65	L	*Leans in towards patient*
66	P	*right what am i gonna do*
67	L	*im just gonna rest* ***{****this [( )]*
68	L	***{****points to measurer in hand*
69	SLT	***{****[stretch your****[****jaw as wide]=*
70	SLT	***{directs gaze towards P, back down to notes***
71	P	*{opens mouth*
72	SSLT	*=as you can*
73	SSLT	***Consulting notes, directs gaze briefly to VC equipment, back to notes***
74	GSLT-L	***Places measurer on patients bottom lip, inspects patient's mouth opening (4.1)***
75	GSLT-L	*Right (.) any wider?*
76	GSLT-L	***Taking measurement of patient's mouth opening (2.8)***
77	SLT	*Directs gaze up to VC equipment*
78	SSLT	*Ka:y*
79	SSLT	*Directs gaze downwards*
80	GSLT-L	*One (.) two (.) thre::e ( )*
81	GSLT-L	***Moves measurer from patients mouth, stands straight and turns body and gaze to SLT (1.2)***
82	P	*Closes mouth*
83	GSLT-L	*About thirty eight* ***{****centimetres*
84	GSLT-L	***{turns gaze to measurer***
85	SSLT	***{****Okay thirty eight*
86	SSLT	***{gaze directed downwards towards notes***

From the SSLT's initial request and the patient's embodied response (lines 1-9) the SSLT acknowledges the patient's response and utters a request oriented to the GSLT-L, establishing if she has a measurer available (Line 10). During the SSLT's utterance, the patient interjects, providing additional information following his embodied response of opening his mouth "*though it is a bit it is a bit stiff round here"* (line 11) which are mirrored by his embodied actions as he raises his hands to the side of his face and rubs the side of his face (lines 12 and 13), demonstrating to the SSLT the location where the patient is experiencing stiffness whilst providing additional information to the SSLT regarding an initial request component. These embodied actions render the patient's experience of pain as visible to the SSLT and GSLT-L, as demonstrated by Heath (2002) in co-present interactions between doctors and patients. From this, the SSLT responds by first acknowledging through nodding (line 14) and then producing her response token "*yeah*" (line 16). Interestingly, here the SSLT acknowledges the patient's additional information, however doesn't query this further within the interaction. In the following turn, the patient engages in the embodied response of opening his mouth, whilst his hands are placed on either side of his face as the GSLT-L responds to the SSLT's request regarding having a measurer acknowledging the request and undergoing the search to obtain the object *"erm yeah let me get one"* (line 18). During her utterance, the GSLT- L re-orients her body to the table to her left, moving objects off a binder located on the table. These actions demonstrate to the SSLT the search for obtaining the equipment in order to fulfil the request. The SSLT proceeds to self-select as she utters her imperative framed as a collaborative endeavour through *"let's*" to measure the patient's mouth opening "*Let's have a measure of how how it's doing"* (line 20). During her utterance, the patient redirects his gaze from the SSLT to the GSLT-L, who is engaging in searching for the measurer, turning her body and gaze to the table on her left. The SSLT similarly obtains a binder located on her table, re- orienting towards the VC equipment as she places the binder down on her lap (line 23). From this, the SSLT declares her actions of writing down the forthcoming measurement (line 25) and instigates a search for the previous measurement from her notes (lines 31 and 32). Alongside this, the GSLT-L obtains her binder from the table, bringing it to her lap (Line 29). Both the SSLT and GSLT-L utilise the binders in order to achieve different courses of action, with the GSLT-L obtaining the measurer from a template located in the binder, whilst the SSLT first identifies the function of the binder in writing down the patient's mouth opening measurement and second searches for a previously conducted measurement taken by Gemma, a different GSLT. In line 30, the GSLT-L is flicking through pages of her binder, undertaking a search for the template containing the measurers. From this, we can also observe the SSLT engaging in

her search in order to achieve the different course of action of obtaining the patient's previous mouth opening measurement as she flicks through the pages whilst producing her *declarative "it measured at I think Gemma would have measured it"* (line 31). Towards the end of her utterance, the SSLT stops flicking through the pages of the binder, which is followed by a 1.6 second silence as she continues her utterance, elongating *"at"* (line 35) as she continues to search for the previous measurement, similarly found to occur within line 31. From this, the GSLT-L removes a sheet of paper containing the measuring device templates from the binder, followed by closing the binder, demonstrating the attainment of the measuring device for the fulfilment of the SSLT's initial request. The SSLT then interjects, with her utterance demonstrating difficulty in fulfilling her course of action of establishing the patient's previous mouth opening measurement, which is noticeably quieter than previous turns at talk *"I can't see it"* (line 39). Following a further silence of 2.4 seconds, the SSLT utters her declarative stating the previous mouth opening measurement of forty-nine millimetres before undergoing treatment (line 42) before the SSLT re-instigates the task at hand which is framed as a collaborative endeavour for a comparison to the previous measurement "*let's have a little compare*" (line 46). During her utterance, the GSLT-L removes the measuring device from the template sheet, before turning and placing the binder and template sheet on the table towards the end of the extract (line 50).

During the sequence, the GSLT-L engages in actions of incipient fulfilment towards the fulfilment of the SSLT's request of having a little measure (line 20), these preparatory actions concern re-orienting her body to the table behind her and moving objects on top of a binder (line 19), placing the binder on her lap (line 29) and flicking through, demonstrating a search for the required equipment for the request (line 30), completing the search and removing the required equipment, the page with the measuring templates on (line 37), removing a template from the sheet (line 43) before turning and placing the template sheet and binder on the table (line 50). Through these actions, the GSLT-L demonstrates to other participants that the search and obtainment of the measuring device is underway in order to achieve the fulfilment of conducting the patient's mouth opening measurement. The binder as an object is made relevant within the interaction in order to fulfil the SSLT's initial request, and whilst the SSLT also draws on her binder within the interaction, she utilises this in order to achieve a different course of action in establishing the previous mouth opening measurement of the patient. The actions of the GSLT-L therefore, show the preparatory steps in allowing the fulfilment of the SSLT's initial request.

Whilst this extract displays the actions of incipient fulfilment from the GSLT, we can also observe the essential role of the GSLT in facilitating the fulfilment of the initial request in the extended sequence. The GSLT enacts the request through her embodied actions, physically carrying out the measurement taking of the patient's mouth opening to achieve the medical task. As she undertakes the course of action, the GSLT utters a request for the patient to increase their embodied actions *"right (.) any wider?"* (line 75). This request is designed as an interrogative and forms a stand-alone request occupying its own turn at talk as the GSLT-L takes the patient's mouth opening measurement. By implementing this interrogative whilst enacting the SSLT's initial request, the GSLT is able to establish if the patient is able to offer more in the fulfilment of the request, and following the patient's response, is able to proceed with the ongoing fulfilment of the initial request within the extended sequence. The request itself occurs in the turns prior to providing the measurement, functioning to determine if the patient can increase the requested action prior to the fulfilment of the extended request sequence.

Within telemedicine consultations, objects provide a resource for participants to recognise the actions of others in and through interaction (Heath & Luff, 2011) as well as being relied upon within collaborative activities and actions as a means of coordinating action (Luff et al, 2003). Within the extended request sequences, objects are made relevant by being made more accessible by the GSLT to the patient or themselves in order to fulfil initial request components. Through these actions, the GSLT makes relevant the object in facilitating future action associated with the SSLT's initial request whilst demonstrating her understanding in the fulfilment of the request.

4.3.1.2 Bodily Positioning of the Patient and GSLT

A further collection considered actions of incipient fulfilment regarding the bodily positioning and orientation of the GSLT (5/20) in fulfilling the initial request in the extended sequence. Bodily positioning is utilised as part of the overall activity of fulfilling the initial requests (Heath, 1986) allowing the GSLT and patient to position themselves in optimal positions to fulfil the initial request. The actions considered within this section concern the positioning of the GSLT in order to facilitate the fulfilment of the initial request, and how these actions make the fulfilment of the initial request in the extended sequence possible.

Within extract 12, we can observe the initial request uttered by the SSLT for the patient to open her mouth so that Lucy (referred to as Luce), the GSLT-L can take a measurement of her mouth opening.

Extract 12- the shift during the request (9) <00.14.48>

1	SSLT	n so karen if you open your {mouth as wide as you can {n luce will take {a=
2	GSLT-L	***{stands up, moves across screen to right side of P***
3	SSLT	***{directs gaze away***
4	P	***{opens Mouth***
5	SSLT	= little {measure a (vaseline)
6	SSLT	**{directs gaze towards P**
7	SSLT	***Directs gaze away***
8	GSLT-L	**{**[( )]
9	SSLT	**{**[that's it yeah]
10	SSLT	**{directs gaze to P**

Simultaneously as the SSLT utters her initial request, declaring the actions of the patient and GSLT-L through her imperatives, the GSLT-L proceeds to stand up and moves across the VC equipment to the right side of the patient (line 2). Towards the end of the SSLT's utterance, the patient fulfils the initial request component through her embodied response of opening her mouth (line 4). Through her re-orientation, the GSLT-L demonstrates to other participants that the fulfilment of the initial request is underway, which is facilitated and made possible through re-orienting her location to the other side of the patient in order to take the measurement of the patient's mouth opening. Within this extract, this is demonstrated by the GSLT-L prior to the completion of the SSLT's utterance in declaring the actions of the GSLT-L in enacting the measurement taking. These actions with the medium of videoconferencing, allow the SSLT to observe the preparatory actions in the fulfilment of the initial request from the GSLT through her embodied actions, demonstrating the undertaking of her request to take a mouth opening measurement (Kraut, Fussel & Siegel, 2003). This can be seen through her gaze changes (lines 3, 6, 7, 10) as she disengages and engages from the ongoing fulfilment of the request, as well as through her acknowledgement "that's it yeah" (line 9) to the GSLT-L's inaudible utterance (line 8) which she produces in overlapping talk.

Similarly, within Extract 13, the GSLT-C performs a similar embodied action of standing up and moving across the VC equipment to the right side of the patient. Within this

extract, the GLST-C's movement occurs following the patient's embodied response (line 27) to the previous requests to take a mouth opening measurement (lines 25 and 26). This occurs in contrast to the previous extract whereby the action occurred during the SSLT's turn at talk.

Extract 13- the shift following acknowledgement (2) <00.05.23>

```
1   SLT:   ok (..) we:ll ither regime is provon to work just as long as you
           {do it as they tell you to do it
2   GSLT-  {turns gaze from SSLT to P
    C
3   SSLT   .hhh i think when you {started off you{found it quite {painful to
4          {hold it for {thirty seconds
5   SSLT                                          {raises hand to right jaw
6                                                                {clasping
                                                                  gesture
7          {tenses hand
8   GSLT-                          {turns gaze to SSLT
    C                      {turns gaze to patient
9          {(0.6)
10  P      {nods
11  SSLT   Lowers hand
12  SSLT   erm but if [you're] able to do that now(.) {erm shall we have a
13  GSLT-                                             {turns gaze to SSLT
    C
14  P                  [yeah  ]
15  SSLT    [look↑]
16  P      {[oh    ]{its
17  GSLT-  {turns gaze to P
    C
18  P                {directs gaze down to bag points at bag
19  P      oh im not {fai its not {painful (around to be fair) (.)
20  P                 {turns gaze to SSLT
21                                  {turns gaze to GSLT
22         {([perhaps] we should move it {up a bit n I dunno)
23  P      {hand gesture by bag          {turns gaze to SSLT
24  SSLT   {[ok      ]
25  SSLT   {nods
26  P      Moves hands towards therabite, picks up therabite
27  GSLT-  do you want to show us?
    C
28  SSLT   well yeah↑ lets have a measure first shall we
29         {carol before we start↑ shall we  meas↑ure?
30  GSLT-  {turns gaze to SSLT, back to P
    C
31  GSLT-  shall we measure?
    C
32  P      Leans head back, opens mouth
33  GSLT-  Stands up and moves round to right side of patient
    C
34  SSLT   so from [the bottom-]
```

Following the SSLT and GSLT-C making their requests to take a measurement (lines 28, 29 and 31), the patient responds through leaning her head back and opening her mouth, demonstrating understanding of her actions required for the fulfilment of the medical task. This is followed by the GSLT-C's action of standing up and moving round to the right side of the patient (line 33). The body then, is utilised as a resource in order to exhibit understanding as a response to first part adjacency pairs (Hindmarsh, Reynolds & Dunne, 2011). In order for the fulfilment of the request to be achieved, the GSLT-C's movement to the other side allows her to take the patient's mouth opening more easily. Through her movements, the GSLT-C demonstrates the incipient fulfilment of the request by positioning herself effectively in order to make the fulfilment of the mouth opening measurement possible.

Within the following extract, the SSLT utters her request to check how wide the patient can open her mouth. We can observe similar embodied actions of incipient fulfilment as the GSLT first stands up and secondly moves to the right side of the patient. These embodied actions are accompanied by verbal utterances from the GSLT oriented towards the patient which function to inform the patient that the embodied actions are in progress to facilitate the fulfilment of the request.

Extract 14- declaring the shift (4) <00.18.22>

1	SSLT	ok n can we check how {much you can open your mout:h
2	SSLT	***{directs gaze away from VC equipment***
3	SSLT	how w-wide you can {open your mouth
4	SSLT	***{directs gaze towards VC equipment***
5	P	***Opens mouth***
6	SSLT	{right have you got that measurer Luce (.)
7	GSLT-L	***{moves head and gaze round to patient's right side, then back to left***
8	SSLT	Let's have a check so you've got you've {got no did yo↑u take all your-
9	SSLT	***{leans forward, points***

			to teeth
10	GSLT-L	**{**i have	
11	GSLT-L	***{turns to table behind and grabs measurer***	
12	P	**{**im gettin use to this now	
13	GSLT-L	***{stands up by patient***	
14	P	***Opens mouth***	
15	SSLT	no[t	
16	GSLT-L	[im gonna have to come **{**round this side just so	
17	GSLT-L		***{moves to right side of patient***
	GSLT-L	i can see sorry	
18	SSLT	they've [taken out a lot of your teeth aven't they↑	

Within extract 14, the SSLT utters her initial request (lines 1-3) which the patient responds to through her embodied action of opening her mouth in the following turn (line 5). The SSLT then self-selects as she utters her request towards the GSLT-L which is responded to by the GSLT-L in overlapping talk as she turns her gaze and body to the table behind her to obtain the measurer (lines 6-11). The patient interjects (line 12) displaying familiarity with the forthcoming exam sequence "*I'm getting use to this now*" as the GSLT-L proceeds to stand up by the patient. The patient opens her mouth as the GSLT-L takes the communicative floor to declare her action of moving, clarifying the purpose of her movement including an apology token. As she does so, she moves to the right side of the patient, in order to conduct the mouth opening measurement.

Within this extract, we can observe embodied actions by the GSLT with the addition of the verbal utterance to declare to the patient the embodied actions. The fulfilment of the initial request is made possible through the GSLT re-positioning herself to facilitate the enacting of request components. The action of standing up and moving to the right side of the patient, demonstrates the developing fulfilment of the initial request through the spatial positioning of the GSLT in order to easily fulfil the initial request.

Through these embodied actions of standing up and re-positioning to the patient's right side, the GSLT engages in actions of incipient fulfilment, demonstrating to the SSLT the preparatory steps being taken to make the fulfilment of the initial request possible. In

conjunction, the GSLT is able to enact initial request components whilst positioning herself so that the SSLT is able to view the ongoing fulfilment of the request. This allows the SSLT to maintain engagement in the ongoing fulfilment of the initial request due to the GSLT not obstructing the view of the VC equipment. This finding resonates with previous research by Pappas & Seale (2009) who found that nurses positioned themselves with telemedicine so that the consultant had visual access to ongoing courses of action. Likewise, these findings support research by Mondada, (2003) who demonstrated that courses of action when using telemedicine videoconferencing were conducted in a way that were recipient designed, allowing for visual access to the fulfilment of courses of actions. The GSLT-L actions of incipient fulfilment demonstrate understanding to the SSLT that the fulfilment of the initial request is underway (Hindmarsh, Reynolds & Dunne, 2009) whilst being oriented to the VC equipment, to allow the SSLT a frame of joint attention to observe the fulfilment of the initial request (Kraut, Fussell & Siegel, 2003).

4.3.2 The immediate Extended Fulfilment of Requests

Having examined the actions of incipient fulfilment that allow the fulfilment of the request possible, the following collection examines the first format identified in responding to initial requests within the data, consisting of the immediate extended fulfilment of requests (9/20). With the immediate fulfilment of requests, the definition proposed by Rauniomaa & Keisanen (2012) is adopted here, which understands immediate fulfilment as the recipients to the request working towards its fulfilment through engaging in relevant embodied actions or through vocal contributions without a separate component of initially accepting. In contrast to Rauniomaa & Keisanen (2012), the fulfilment of requests is not always simply carried out as demonstrated in co-present interactions. In the following extracts, whilst participants will be seen to proceed to undertake actions towards fulfilling the initial request and therefore immediately fulfilling the requests, the requests become extended as a result of problems during their fulfilment. These concern problem presentation from the GSLT (3/12) or patient (5/12) in the fulfilment of the request, as a result of an interjection (1/12). Each of these will be demonstrated whilst considering the role of the GSLT in fulfilling the extended request.

Within the following extract, the immediate extended fulfilment of the initial request occurs as a result of problem presentation from the GSLT-L in taking the patients mouth opening measurement. The SSLT begins by uttering her initial request in the extended sequence for the patient to open her mouth and for the GSLT to take a measurement (lines 1- 3). During the SSLTs request, the GSLT stands up simultaneously with "*mouth",* prior to the SSLT's imperative for the GSLT to take a measurement, demonstrating the GSLTs understanding of her actions relating to the actions of the patient in the fulfilment of the request. In responding to the request, the GSLT-L and patient do not verbally respond, rather they proceed in undertaking its fulfilment through their embodied actions.

Extract 15- extending through GSLT problem presentation (9) <00.14.48>

1	SSLT	n so karen if you open your **{**mouth as wide as you can **{**n luce
2	GSLT-L	***{stands up, moves across screen to right side of P***
3	SSLT	***{directs gaze away***
		will take **{**a little **{**measure a (vaseline)
4	P	***{opens Mouth***
5	SSLT	**{directs gaze towards P**
7	SSLT	***Directs gaze away***
8	GSLT-L	**{**[( )]
9	SSLT	**{**[thats it yeah]
10	SSLT	**{directs gaze to P**
11	SSLT	**directs gaze away**
12	GSLT-L	so **{**im going from th::e (.) the gum isn't it
13	GSLT-L	**{places measurement on P's bottom lip**
14	P	Mhm
15	SSLT	**Directs gaze to P and GSLT-L**
16		
17	GSLT-L	***Placing measurer on patients lip***
18	SSLT	***Turns gaze to VC equipment from notes***
19	GSLT-L	**{**°im not hurting you am ↑i°
20		***{holding patient mouth open with finger, adjusting position of measurer***
21	P	No
22	GSLT-L	no so thats on the lower **{**gum now[(can you move any]:thing?)

23	SSLT	[yeah]
24	SSLT	***{turns to notes***
25	P	No
26	GSLT-L	***Inspecting patients mouth***
27	GSLT-L	°So **{**that° i::s °twent::y°
28	SSLT	***{turns gaze to VC equipment***
29	GSLT-L	***Inspecting patients mouth***
30	SSLT	**Turns gaze to notes**
31	GSLT-L	**Inspecting patients mouth (7)**
32	SSLT	***Turns gaze and body to VC equipment, picks up therabite***
33	GSLT-L	It's hard to see with the top- [(end)]
34	SSLT	[I know] it is tric[ky]
35	GSLT-L	[ab]out er:m
36	GSLT-L	***Brings measurer from patient's mouth, places measurer back on patients lip***
37	GSLT-L	(.) sorry (.) okay so that's (.) **{**that seems to be mo::re
38	P	***{alternating gaze between L and Measurer***
39		(1.2)
40	GSLT-L	Nearer **{**two and a half
41	GSLT-L	***{stands up straight from leaning towards P for measuring***

From this, the SSLT redirects her gaze away from the other participants, disengaging from the communicative floor (line 7). The GSLT-L then produces an inaudible utterance to the recording equipment (line 8), however this sound is recognised and responded to by the SSLT in overlapping talk with her acknowledgment utterance *"that's it yeah"* (line 9) as she redirects her gaze to the patient (line 10) and then redirects her gaze away from the interaction (line 11). The GSLT-L then produces an interrogative to establish the positioning of the measurer in order to fulfil the initial request "*so im going from the bottom gum isn't it"* (line 12) as she simultaneously begins to place the measurer on the patients bottom lip (line 13). The patient responds in the following term with her verbal acknowledgement "*mhm"* (line 14) allowing for the continuing fulfilment of the initial request. The SSLT proceeds to redirect her gaze towards the patient and GSLT-L, re-engaging with the interaction and fulfilment of the initial request. The GSLT-L proceeds to place the measurer on the patient's lip, followed by the SSLT redirecting her gaze to her notes, disengaging from the ongoing fulfilment. The GSLT-L then produces an interrogative towards the patient to establish she isn't in any pain

"*I'm not hurting you am I"* (line 19) as the GSLT-L moves her finger in the patient's mouth and adjusts the position of the measurer (line 20). The patient responds in the following turn, acknowledging that she isn't experiencing any pain (line 21). The GSLT-L repeats the patient's response token in the following turn followed by a declarative of the position of the measurer and interrogative towards the patient to establish if she is able to move anything (line 22). The SSLT responds in overlapping talk to the GSLT-L's declarative with an acknowledgment token "*yeah*" (line 23). Following this, the patient responds acknowledging she is unable to extend to move anything, relating to the ongoing course of action in taking the mouth opening measurement (Line 25). The GSLT-L proceeds to utter the measurement "*So that is twenty"* (line 27). Her utterance is noticeably quieter than the previous talk and elongated, as she establishes the mouth opening measurement, demonstrating her search to establish the measurement, further demonstrated through the elongation of her utterance. Over the following turns, the SSLT redirects her gaze towards the VC equipment (line 28) following the GSLT-L's utterance regarding the measurement. The GSLT-L continues to inspect the patients mouth, with her gaze directed towards the measurer (line 29). Upon seeing this, the SSLT redirects her gaze away, disengaging from the interaction (line 30). Over the next 7 seconds the GSLT-L proceeds to fulfil the initial request through taking the patient's mouth opening measurement (line 31). The SSLT proceeds to re-orient her gaze and body towards the VC equipment as she picks up a therabite for a future oriented task (line 32).

At this point, the request becomes extended as the GSLT-L declares problem presentation in fulfilling the initial request due to difficulty in seeing the measurement (line 33). This is responded to by the SSLT in overlapping talk as she demonstrates participant alignment with the GSLT-L in the difficulty in taking the measurement *"I know it is tricky"* (line 34). Then GSLT-L then interjects, as she begins to utter the measurement "*about erm"* (line 35) she then proceeds to bring the measurer from the patient's mouth, her gaze directed at the measurer in order to establish the patients mouth opening measurement (line 36). The GSLT-L continues her utterance with an apology token before proceeding to utter the mouth opening measurement (Line 37). The patient alternates her gaze between the GSLT-L and the measurer as the GSLT-L establishes the patient's mouth opening. Following a 1.2 second pause, the GSLT-L utters the measurement of the patient's mouth opening *"nearer two and a half"* (line 40) as she stands up from the patient (line 41) having fulfilled the initial request component from the SSLT.

Within this extract, the patient and GSLT proceed with the immediate fulfilment of the request through their embodied actions. The patient fulfils an initial request component of opening her mouth in the following turn through her embodied response. The fulfilment of the second request component of the GSLT-L taking the measurement of the mouth opening, is then undertaken in the following turns. The request itself then becomes extended when the GSLT-L declares problem presentation, extending the fulfilment of the request and the medical task.

Extract 16 below concerns the immediate extended fulfilment of the initial request from the SSLT of the patient having a drink of water to conduct a swallow test. The SSLT's initial request is explicit, detailing the action components required from the recipients for its fulfilment. What characterises the immediate extended fulfilment of this extract is the problem presentation displayed by the patient in the amount of liquid required for the fulfilment of the request.

Extract 16- Extending through patient problem presentation (14) <00.17.48>

```
1     SSLT       Hehehe {.hhh thank you very much {what we'll do is >we'll
2     P                 {Gaze directed away       {gaze directed SSLT
3     SSLT       try to try< some {water .hhh im gonna ask you to just
4     SSLT                        {Turns towards P from consulting notes
5     SSLT       (.) drink {it dow:n
6     SSLT                  {Raises hand
7     SSLT       Circular hand gesture (1.9) (fig 2)
8     SSLT       in one go as comfortably as you can {alri↑ght with
9     SSLT                                           [Lowers hand
10    SSLT       {a {hundred mills (.) n what {wendy
11    SSLT          {raises hand with 'pinching gesture'
12                                          {slight hand Gesture towards VC
                                            Equipment
13    P          {Nods
14    SSLT       will do is {she'll (.){count your {swallows .hh
15    P                     {directs gaze to W, back to SSLT
16    SSLT                                        {Circular

                                                  hand gesture

                                                  ↑speed
17    GSLT-W                             {Returns on screen sits

                                         Down
18    SSLT       (.) and {{im gonna {time you mkay
19    SSLT                {Gestures to self
20    SSLT                           {circular hand gesture
21    GSLT-W             {pours water into glass
22    P          Directs gaze to W
23    GSLT-W              {Returns on screen, sits down
```

24 *{pours water into glass*
25 P *Directs gaze to GSLT-W*
26 GSLT-W *Continues to pour water into glass (4.0)*
27 GSLT-W *Brings head down, gaze directed at cup (2.0)*
28 GSLT-W *Raises head and gaze towards patient*
29 GSLT-W there we go {[that's a hundred] mills
30 P *{picks up cup of water*
31 SSLT [ok::ay] so
32 {if [wendy has a feel if you]
33 P [there's a there's] a
34 P *{brings cup of water up to eye level*
35 P {week's worth {there
36 **P** *{brings hand to chest*
37 **P** *{turns gaze to GSLT-W, back to SSLT*
38 SSLT ahaha yeah[so if yu ju yu]
39 P [theres a week's] weeks [worth there]
40 SSLT [oh my god]
41 SSLT you do what you can and {wendy will count your swallows n when
42 SSLT *{hand gesture towards VC equipment*
43 SSLT you're ready I'm gonna put the {timer on (.) alright
44 SSLT *{picks up timer from table*
45 P (did she say) {keep going [then]
46 P *{circular hand gesture*
47 GSLT-W [just] yeah[just drink it]=
48 SSLT [just keep going] as
49 you can
50 GSLT-W =if you can drink it {continuously [that]fine but if you feel
51 GSLT-W *{circular hand gesture*
52 P [yeah]
53 GSLT-W you need to {stop .hhh then stop {im just {gonna feel your
54 GSLT-W *{hand gesture towards cup*
55 GSLT-W *{raises fingers to patient's neck*
56 P *{raises drink to mouth*
57 GSLT-W Swallows and count okay
58 SSLT Mkay
59 GSLT-W Okay
60 P *drinks water (10.0)*
61 P *Lowers cup and swallows (4.0)*
62 SSLT Ok:ay
63 GSLT-W {okay so we had five initially followed by three {clearing
64 GSLT-W *{turns gaze to SSLT*
65 P *{swallows*
66 GSLT-W FOUR clearing [swallows]
67 P [ahaha]
68 GSLT-W *Removes fingers from patient's throat*
69 P crickey (i'll eat that then)
70 GSLT-W ah haha
71 P *Places cup down on table*
72 SSLT okay
73 GSLT-W you alright
74 P *Removes tissue from bag on lap, wipes mouth, directs gaze to SSLT*
75 P mhm yep

```
76    GSLT-W      so yeah {[so ] five initial like sequential swallows
77    GSLT-W              {circular hand gesture
78    SSLT                 [kay] yep
79    GSLT-W     n then after all the drink had gone there were four further
80               clearing Swallows
```

Towards the end of the SSLT's initial request, the GSLT-W returns into the view of the VC equipment having obtained a glass (line 23). The patient redirects his gaze to the GSLT-W demonstrating understanding of the GSLT-W as facilitating the initial request component oriented towards the patient "*we'll try to try some water .hhh im gonna ask you to just (.) drink it down*" (lines 1-5). From the patient's redirection of gaze, the GSLT-W engages in actions of incipient fulfilment, proceeding to continue to fill the glass up with water over four seconds (line 26), bring her head down with her gaze directed at the glass to establish the requested amount of one hundred millimetres (line 27) and then raising her head and redirecting her gaze to the patient (line 28). From this the GSLT-W takes the communicative floor uttering her declarative that her embodied actions are complete *"there we go that's a hundred mills"* (line 29). During her utterance, the patient proceeds to pick up the glass of water as the SSLT interjects in overlapping talk with her response token "*Ok::ay"* and proceeds with her imperative "*so if Wendy has a feel if you*" (lines 31 and 32) which she abandons in overlapping talk with the patient. At this point, the patient declares problem presentation through his declarative regarding the volume of water *"there's a there's a week's worth there"* (line 33-35) which he repeats as a result of the overlapping talk, demonstrating potential difficulty in the fulfilment of the request. During his utterance, the patient raises the glass of water to his eye level (line 34) and towards the end of his turn redirects his gaze between the GSLT-W and SSLT (line 37). The patient's problem presentation here demonstrates difficulty in the fulfilment of the request and the completion of the medical task. The SSLT responds with laughter followed by an acknowledgement token and proceeds to utter a further imperative *"so if yu ju yu"* (line 38) which she abandons during her turn at talk due to overlapping talk with the patient as he repeats his previous declarative regarding the volume of water (line 39). Towards the end of the patient's utterance in line 39, the SSLT self-selects in overlapping talk in response with her exclamative *"oh my god*" (line 40), functioning to demonstrate alignment with the patient in the difficulty in fulfilling the initial request. With this, the fulfilment of the request is not abandoned following the potentially difficulty due to the volume of water, as the SSLT follows up with an imperative prompting the initial request towards the patient with a weak epistemic stance *"you do what you can*" (line 41) before declaring the actions of the GSLT-W "*n Wendy will count your swallows*" (line 41) and her actions, which she frames as

contingent on when the patient is ready, "*and when you're ready im gonna put the timer on*" (line 43) followed by seeking acknowledgment "*alright"* (line 43). The patient responds in the following turn with an interrogative seeking clarification "*did she say"* (line 45) oriented to the GSLT-W, followed by a declarative regarding his actions "*keep going then*" (line 45) as he performs a circular hand gesture (line 46). At this point, the GSLT-W begins to facilitate request making through clarifying for the patient the action components required for the fulfilment of the request following the patient's problem presentation. The GSLT-W responds in overlapping talk with the patient as she begins to clarify the SSLT's previous utterance in an-other initiated other repair *"just*" before producing a response token confirming the patient's utterance "*yeah*" followed by an imperative "*just drink it*" (line 47) which she abandons due to overlapping talk with the SSLT who also attempts to repair and clarify for the patient "just keep going as you can" (line 36). The GLST-W then takes the communicative floor, producing an imperative oriented towards the patient "*if you can drink it down continuously that fine but if you feel the need to stop then stop*" (lines 50, 53) as she performs a circular hand gesture with *"continuously*" and gestures to the glass at "*stop*". The patient responds to overlapping talk (line 52) as the GSLT-W continues her utterance, raising her fingers to the patient's neck(line 55) with a declarative of her actions "*im just gonna feel your swallows and count okay*" (lines 53,57). During her utterance, the patient begins to raise the glass to his mouth, demonstrating the patient's initiation of the fulfilment of the initial request component.

Following the patient raising the glass to his mouth, the SSLT and GSLT-W both produce response tokens in the following turns (lines 59 and 62) in response to the patient's previous embodied actions of proceeding with the fulfilment of the initial request. Over the course of the next ten seconds in the interaction, the patient proceeds to drink the one hundred millimetres of water (line 60) before lowering the cup slightly from his mouth and swallowing (line 61). The SSLT produces an elongated acknowledgment token in the following turn, indicating the fulfilment of the initial request component from the patient (line 62). Following this, the GSLT-W self-selects with her declarative of the amount of initial swallows from the patient as she redirects her gaze to the SSLT as the recipient of her utterance *"okay so we had five initially*" she then proceeds to utter the second component of her declarative which she redesigns as the patient produces another swallow during her turn at talk "*followed by three clearing FOUR clearing swallows*" (lines 63-66). The patient produces a laughter token in overlapping talk with the GSLT-W (line 67) as the GSLT-W proceeds to remove her fingers from the patient's

neck (line 68). The patient self-selects in the following turn with a declarative *"crickey I'll eat that then*" referring to a previous sequence of talk concerning difficulty in trying biscuit for a future swallow test which isn't taken up in the following turns. Rather, the GSLT-W produces a response token as the patient proceeds to place the cup down on the table. The GSLT-W produces an interrogative checking in with the patient *"you alright*" (line 73) followed by the patient obtaining a tissue from his bag located on his lap, wiping his mouth and redirectinghis gaze to the SSLT (line 74) but responding to the GSLT-W's interrogative in the following turn "*mhm yep*" (line 75). From this the GSLT-W holds the communicative floor, re-orienting her talk to the SSLT and reinstating the outcome of the swallow test "*so yeah so five initial like sequential swallows n then after all the drink had gone there were four further clearing Swallows"* (lines 76-80). The SSLT responds in overlapping talk with the GSLT-W with her response token "*kay yep"* (line 78).

Within this extract, the GSLT and patient proceed with the immediate fulfilment of the SSLTs explicit request which detailed the action components required for its fulfilment. The extended nature of the request occurs when the patient declares problem presentation in its fulfilment due to the volume of water to consume. The SSLT responds to the patient's problem presentation through prompting the initial request. The essential role of the GSLT in the fulfilment of the request can then be observed in regards to request making through clarifying for the patient the action components required for its fulfilment (lines 33-44), as well as facilitating the fulfilment through enacting the medical task of obtaining the number of swallows from the patient and also through providing clarification for the patient regarding the fulfilment of the initial request within the extended sequences

So far we have considered the immediate extended fulfilment due to problem presentation from the GSLT and patient in the fulfilment of the extended request. Extract 17a displays an instance where the fulfilment of the initial request is immediate extended as a result of an interjection from the patient expressing a concern related to the initial request, which delays the fulfilment of the request. The initial request from the SSLT concerns an interrogative regarding the patient's mouth opening ability following the initial declarative from the SSLT "*you're doing your therabite"* (line 1). The patient responds in the following turn with her declarative that she didn't do the regime that day *"I didn't do mine today"* (line 7). Though related to the medical task, the patient's response detracts from the course of action in fulfilling the extended request. The GSLT-L, begins her actions of incipient fulfilment as she turns her

body orientation and gaze to the table to her left, and begins the process of obtaining the measurer in order to fulfil the initial request (line 8).

Extract 17a- initial request and interjection (16) <00.50.27>

1	SSLT	you're doing your therabite what {what was your mouth opening now
2	SSLT	***{points to mouth***
3	SSLT	don it might be worth doing a quick check luce have you got a little measurer to see what {where{we're at
4	SSLT	***{lowers hand***
5	SSLT	***{directs gaze away***
7	P	{i didn't do mine today=
8	GSLT-L	***{turns body and gaze to table on left picks up binder with measurers in***
9	SSLT	no [no thats okay]

From this extract, a sequence of talk occurs (not included in transcript) whereby the patient takes the communicative floor discussing her difficulty in maintaining the regime due to her psychological state and attitude. This interjection detracts from the course of action in fulfilling the initial request. During this sequence, the GSLT-L continues with her actions of incipient fulfilment in obtaining the measurer whilst the patient and SSLT engage in turns at talk regarding the patient's maintenance of the therabite regime. In this sense, the fulfilment is still underway as a result of the action of the GSLT-L but put on hold as the patient and SSLT discuss a concern related to the initial request. We re-join the interaction below (extract 17b) as the patient concludes her turns at talk, and re-orients to the initial request from the SSLT through declaring the possible lack of improvement from the last measurement (line 37) and through her pointing gesture towards the measurer in the GSLT-L's hand (line 38). From this, the SSLT responds declaring the lack of actions and the situational factors impacting the lack of progression regarding the patient's rehabilitation*, "holding off a little bit for your camera test"* (line 44) "*where to go with your rehab"* (line 46) "*and Christmas*" (line 50). This is acknowledged by the patient through her response token in overlapping talk "*yeah"* (line 53) as well as her embodied responses of nodding (line 51). From this, the SSLT prompts the initial request which is designed with a sensitivity towards the patient following the sequence of talk *"I'm not checking up on you"* (line 54).

Extract 17b- returning to fulfilling the request (16) <00.51.18>

37 P so im getting[back] into it[now]{[but] i [don't know]
38 P ***{turns gaze and points to measurer in GSLT-Ls hand***
39 SSLT [yeah] [thats fine] [and] [ye know]
40 P [if there'll be] much [improvement]
41 SSLT [we've been] {[and in all fair]ness
42 P ***{turns gaze to SSLT***
43 GSLT-L ***{turns gaze to SSLT***
44 SSLT we've been holding off a little bit for your {camera test as well
45 SSLT ***{hand gesture to camera at side***
46 SSLT tryin te {where to go next with your {rehab so .hh ye know
47 SSLT ***{circular hand gesture*** ***{lowers hands***
48 {its its a we have had a bit of {down time it's not al:l
49 ***{circular hand gesture*** ***{nods***
50 SSLT {ye know your fault don {ahuh.hh and chris[tmas] ye know so
51 P ***{nods*** ***{nods***
52 GSLT-L ***{nods***
53 P [yeah]
54 SSLT Let's have a {little look im just im {not {checking on you but im
55 SSLT ***{points to mouth*** ***{waves hand outwards Towards VC equipment***
56 P ***{raises hand to mouth*** ***{pulls lower lip down and opens mouth***
57 GSLT-L ***{stands up***
58 SSLT just wondering what your {measuring it {thats {all don {.hh ye
59 SSLT ***{points to mouth*** ***{lowers hand***
60 P ***{nods***
61 GSLT-L ***{moves round to right side of patient***
62 know [just so we can keep] an eye on it

63 GSLT- **{**[(can you put your head back)]
L
64 P **{pulls bottom lip down with index finger, lowers Hand**
65 SSLT ***Turns gaze to notes on table***
66 GSLT- ***Starts to place measurer on patient's mouth***
L
67 P ***Pulls lower lips down with fingers***
68 GSLT- ***Places measurer on patient's mouth***
L
69 SSLT what did we measure it at
70 GSLT- is that as far as you can open
L
71 P ***Nods***
72 P Ah
73 GSLT- ***Taking patients mouth opening (3.1)***
L
74 GSLT- okay so that's [t:o]
L
75 SSLT twenty [ni]ne i wrote last time
76 (2.2)
77 GSLT- okay so thats to **{**th:e the bottom of the front **{**teeth[is it] faye
L
78 GSLT- ***{turns gaze from P to SSLT***
L
79 SSLT ***{turns gaze to GSLT-L***
80 SSLT [yeah] yeah
81 SSLT yeah
82 GSLT- ***Turns gaze back to patient, continues with measurement taking (2)***
L
83 SSLT ***Turns gaze back to notes***
84 GSLT- so to the bottom of **{**your front teeth we've go::t
L
85 SSLT ***{turns gaze to VC equipment***
86 SSLT ***Turns gaze back to notes***
87 GSLT- ***Taking patients mouth opening measurement (5.8)***
L

88 GSLT- maybe {twenty {three today
L
89 GSLT- ***{stands back from patient, turns gaze to SSLT***
L
90 P ***{closes mouth and lowers fingers from bottom lip***
91 SSLT mkay so its gone do::wn a bit {then okay that's fine
92 SSLT ***{turns gaze to VC equipment***
93 [jus]as [you can]
94 P [(not bad)] {[i jus]
95 GSLT- ***{moves across patient towards Chair***
L

During the SSLT's prompt (lines 50-54), the patient and GSLT-L proceed with the ongoing fulfilment of the initial request. The patient responds for the measurement taking through her embodied response of raising her hand to her mouth, pulling down her lip and opening her mouth (line 56). The GSLT-L proceeds to stand up whilst the patient enacts these actions and moves round to the right side of the patient (line 61), engaging in actions of incipient fulfilment towards the initial request. Towards the end of the SSLT's prompt, the GSLT-L interjects in overlapping talk with her interrogative "*can you put your head back*" (line 63). During her utterance, the patient pulls her bottom lip down and proceeds to lower her hand (line 64). The SSLT disengages from the interaction, turning her gaze to the notes on her table (line 65) as the GSLT-L and patient engage in embodied actions towards the fulfilment of the initial request, with the GSLT-L starting to place the measurer on the patient's lip (line 66) as the patient proceeds to assist by pulling her lower lip down with her hand (line 67). The GSLT-L then places the measurer on the patient's mouth (line 68)

As the GSLT-L enacts the measurement taking of the patient's mouth, the SSLT self-selects with her interrogative searching for the previous measurement from her notes "*what did we measure it at"* (line 69). The GSLT-L utters an interrogative towards the patient regarding if she can stretch her mouth any further "*is that as far as you can open"* (line 70). The patient responds in the following turn through her embodied action of nodding (line 71) and her verbal utterance *"ah"* (line 72) as the GSLT-L proceeds to take the patient's mouth opening measurement. The GSLT-L begins to produce her utterance which she abandons due to overlapping talk from the SSLT self-selecting to utter her declarative of the patient's previous mouth opening measurement (line 74). The GSLT-L then takes the communicative floor,

redirecting her gaze to the SSLT and uttering her interrogative of the specific position of the measurer on the patient's mouth "*okay so that's to the bottom of the front teeth is it Faye"* (line 77). This is acknowledged by the SSLT in overlapping talk with her response tokens "*yeah yeah yeah*" (line 80-81). With this acknowledgement, the GSLT-L redirects her gaze to the patient and continues with the measurement taking (line 82). The SSLT disengages from the fulfilment of the request, turning her gaze back to her notes on the table (line 83). The GSLT-L then begins to utter the measurement following the SSLT's acknowledgment, demonstrating participant alignment of the previous turn "*so to the bottom of your front teeth we've got"* (line 84). The SSLT, redirects her gaze during the utterance to the VC equipment, and then back to her notes (Line 85-86). Over the next 5 seconds, the GSLT-L enacts the fulfilment of the request (line 87) before uttering the patient's mouth opening measurement "*maybe twenty three today"* (line 88). Through this utterance, the GSLT-L demonstrates a weak epistemic stance regarding the measurement through "maybe" as well as a change in the measurement through the use of *"today*". During her utterance, she stands back from the patient and turns her gaze to the SSLT, demonstrating the SSLT as the recipient to the measurement from her initial request. The patient closes her mouth and proceeds to move her fingers from her bottom lip (line 90). Acknowledgement is provided by the SSLT in the following turn with her declarative of a decreased opening *"mkay so it's gone down a bit then okay that's fine"* (line 91).

This extract shows the immediate extended fulfilment of the initial request following an interjection from the patient with talk related to the initial request, though not undertaking the course of action with the initial request. During the sequence of talk between the patient and SSLT (not included in transcript), the GSLT-L engages in actions of incipient fulfilment towards the initial request, allowing her to achieve the fulfilment of the initial request at a future point during the turns at talk. The SSLT prompts the initial request, and the patient and GSLT-L collaboratively engage in embodied actions to fulfil the initial request. Similar to previous extracts, the essential role of the GSLT-L can be observed through facilitating the fulfilment of the initial request through physically enacting the components required for its fulfilment.

These extracts show how the immediate extended fulfilment of requests is achieved over the following turns, with participants enacting components of the initial request in order to achieve its fulfilment. Whilst participants proceed to enact components of the requests, the immediate extended fulfilment of requests occurs as participants manage problems during the fulfilment of the initial request. With this, though participants launch into the immediate

fulfilment of the request, the actions undertaken for its fulfilment are undertaken over sequences of talk (Lee, 2009).

4.3.3 Acceptance and Fulfilment of Requests

The second collection of responses to initial requests within extended sequences considered here concerns a two-part response of the initial acceptance to the request in the following turn, followed by the fulfilment of the request over the sequence of talk (8/20). Though taking part in separate turns, the acceptance and fulfilment of the request are linked actions, with the acceptance to the request demonstrating an orientation to the projected course of action initiated by the request, and the fulfilment in carrying out what was requested (Rauniomaa & Keisanen, 2012). The initial acceptance to the request shows how the patient and/or GSLT first agree to the forthcoming course of action, dependent on who the initial request is oriented to, followed by the carrying out of what was initially requested. Throughout this section, we will further build on the essential role of the GSLT in facilitating request making and the fulfilment of requests.

In Extract 18, the SSLT utters her initial request oriented towards the patient for them to have something to eat or drink to check the patient's swallowing ability, with the patient providing their initial acceptance firstly through their embodied action of slightly nodding (line 6) followed by their verbal acknowledgment in the following turn (line 8).

Extract 18- accepting the course of action (14) <00.09.18>

1	SSLT	okay s:o (.) i mean be {good to just see you having a
2	SSLT	{***turns gaze from notes to VC equipment***
3		little bit of drink and something to eat if that's alright
4		so we can have a check of {your swallow is that {o↑kay?
5	GSLT-W	{***turns gaze to P***

6	P	***{slight nod***
7		(1.1)
8	P	yeah yeah no problem
9	GSLT-W	ye↑ah
10	SSLT	Y[ea:h]
11	P	[yeah]
12	P	***Moves hand to table in-front***
13	GSLT-W	***Points with pen to table infront of patient***
14	GSLT-W	There's {som- there's {some water there
15	P	***{brings water into view of VC equipment***
16		***{points to infront of GSLT, lowers hand***
17	GSLT-W	***Re-orients body towards patient, raises hand out towards patient, retracts hand to her neck and moves hand outwards towards patient***
18	P	{yeah
19	P	***{nods***
20	GSLT-W	Just place my fingers on {your {throat jus so I can {feel
21	GSLT-W	***{places fingers on patients throat***
22	P	***{raises cup of water to mouth***
23	P	***{takes drink of water***
24	P	***Lowers cup down onto table, swallows water (4.6)***
25	P	{Enough?
26	P	***{turns gaze to GSLT***
27	GSLT-W	Yep {good
28	GSLT-W	***{removes fingers from patient's throat, turns body from patient towards table***

The patient in the following turns provides acceptance for the fulfilment of the request, initially through a slight nod of his head towards the end of the SSLT's initial request (line 6), and secondly, following a 1.1 second silence, through verbally accepting the request *"yeah yeah no problem"* (line 8). In the following turns, the GSLT-W produces the response token with increased intonation (line 9), which is responded to by the SSLT and patient in overlapping talk (lines 10 and 11). The patient then proceeds to move his hand out to the table located in front of him, followed by the GSLT-W gesturing to the table in front of the patient with her pen. Through these actions, we can observe the joint focus of attention between the GSLT-W and patient to an object on the table out of view of the VC equipment. Following this, the GSLT-W takes the communicative floor producing her declarative "*there's som- there's some water there"* (line 14) simultaneously as the patient retracts his hand, revealing the cup of water from on the table, which in the previous turn was the joint focus of attention between the GSLT-W and patient. The GSLT- then proceeds to re-orient her body towards the

patient, raising her hand towards the patient before retracting her hand and touching her own neck, and finally moving her hand out towards the patient. The patient produces the acknowledgement token following her actions "*yeah*" as he simultaneously nods (lines 18 and 19) demonstrating his acquiring of the water from the GSLT-W's previous verbal utterance. Following this, the GSLT-W takes the communicative floor declaring her actions demonstrated in the previous turn (line 17) *"just place my fingers on your throat jus so I can feel"* (line 20), which is not verbally acknowledged by the patient. The GSLT-W proceeds to place her fingers on the patient's throat following her verbal declarative (line 21). The patient raises the cup to his mouth (Line 22), before drinking the water (line 23) and lowering the cup onto the table and swallowing the water (line 24). Through these actions, the patient fulfils the initial request from the SSLT of having a drink, which in line 25, he seeks to clarify if the amount was sufficient "*enough?"* (line 25) functioning to establish if the requirements for the fulfilment of the request have been achieved as he redirects his gaze to the GSLT-W. The GSLT-W responds in the following turn with her response token *"yep good*" (line 27) as she removes her fingers from the patients throat and redirects her body orientation from the patient, to the table.

Within this extract, the patient first provides acceptance through his response token (Line 8) which displays that the fulfilment of the request will follow. From this, the patient and GSLT-W proceed with the fulfilment of the initial request through enacting request components, with the patient taking a drink of water whilst the GSLT-W checks the patient's swallowing ability through placing her fingers on his neck. The essential role of the GSLT-W can be further observed within this extract through facilitating the fulfilment of the request through physically enacting the request component and achieving the medical task.

Extracts 19a, 19b, and 19c display the extended request sequence for the patient to undertake a 30 second therabite regime. Over the course of these extracts a number of features are noticeable. Firstly, the patient declares problem presentation in the fulfilment of the request at two points relating to the duration of the regime (Line 8) and with the equipment being cleaned prior to undertaking the fulfilment of the request (Line 27) displaying the immediate extended fulfilment of the extended request. Secondly, The GSLT plays an essential role in request making through clarifying the action components for the fulfilment of the request for the patient (Line 21), whilst also facilitating the fulfilment of the request through undertaking the counting sequence as a result of the SSLT not being able to see as well (Line 67).

The SSLT initiates her request for attempting the therabite regime with the patient (lines 10-14). Within this extract, the patient is engaged in a different course of action as she takes a drink of water and places the bottle on the floor (lines 2, 4 and 9). From this, she directs her gaze to the SSLT and wipes her mouth with a tissue (line 13). The SSLT following her initial request, seeks clarification from the patient with her acknowledgment token with increased intonation *"yeah?"* (Line 16). The GSLT-L redirects her gaze from the SSLT to the patient, demonstrating her understanding of the patient holding the next turn at talk in responding to the adjacency pair, request-response. The SSLT redesigns her request towards the patient as a further interrogative *"wanna give that a go?"* (Line 18). During her turn at talk, the patient redirects her gaze to the GSLT-L producing an apology token in overlapping talk with the SSLT. The GSLT-L proceeds to take the communicative floor and re-employs the SSLT's request in the turns at talk as she raises her hand clasped towards her mouth, followed by moving her hands towards the patient and finally lowering her hand (lines 21-24). In the following turn the patient provides acceptance (line 25) of the initial request from the SSLT.

Extract 19a- undertaking the therabite regime (9) <00.32.55>

1	SSLT	↑O↓kay (.) {okay it might be worth once you've had a drink just to see=
2	P	***{raises drink to mouth, drinks***
3	SSLT	={how you {fe:el keepin the hold{for thirty seconds
4	P	***{Lowers drink from mouth***
5		***{raises hand to mouth {lowers hand pinching gesture by mouth***
6		{its quite a lo:ng hold .hhh er:m
7	P	***{redirects gaze to SSLT***
8	P	(bit long that) {isn't it yeah
9	P	**{directs gaze away, places water bottle on floor**
10	SSLT	Ye:ah it is quite long thirty seconds
11		{.hhh ma↑ybe let just shall we just {try that=
12	SSLT	**{raises hand to mouth,lowers hand**
13	P	**{redirects gaze to SLT, wipes mouth with tissue**

14 SSLT =once just to see if you can hold that comforta↑bly?

15 (1.2)

16 SSLT ye↑ah?

17 GSLT-L *Turns gaze to patient*

18 SSLT wanna {give[that] a g↑o

19 P ***{turns gaze to GSLT-L***

20 P [sorry]

21 GSLT-L shall we shall we just **{**try that once to see if you can

22 GSLT-L ***{raises hand clasped***

23 GSLT-L **{**hold for thirty seconds [comfortably?] yeah

24 GSLT-L ***{moves hand slightly towards patient,Lowers hand***

25 P [yeah alright then yeah]

26 SSLT [right]

27 P [yeah]i just **{**wanna get that off there

28 P ***{points downwards to own lap***

29 P [(inaudible talk)]

30 GSLT-L [thats okay]**{**Faye im am i able **{**to clean this

31 GSLT-L ***{points downwards to patient's lap***

32 ***{re-orients gaze And body to Table behind***

33 GSLT-L plater for karen using **{**e[rm]

34 GSLT-L ***{turns body and gaze to SSLT***

35 SSLT **{** [yeah][the cleaning wipe yeah]

36 GSLT-L cle[aning wipes is that ok]

37 P ***{turns gaze to GSLT***

38 SSLT **{**yeah yeah

39 P ***{turns gaze to SSLT***

40 GSLT-L ay just to cause er the**{**tissue hasn't got the blood off

41 GSLT-L ***{shaking hand gesture towards patient's lap***

42 SSLT aww[yeah okay]

From the patient's acceptance of the request (line 25), a sequence of talk occurs whereby the patient produces an declarative for something to be removed from the therabite (line 27) as she points down to her lap where the therabite is located (Line 28). This is acknowledged by the GSLT-L "*that's okay"* as she produces her interrogative towards the SSLT "*faye im am I able to clean this plater for Karen using erm cleaning wipes is that okay*" (line 30) as she points down to the patient's lap at the beginning of her utterance, followed by re-orienting her gaze and body to the table behind her (line 31). This is acknowledged by the SSLT in overlapping talk through her response token *"yeah"* as she acknowledges the use of the cleaning wipes to address the contingency in the fulfilment of the initial request "*the cleaning wipe yeah yeah yeah*" (line 35-38). The GSLT-L continues her turn at talk with her justification "*just to cause the tissue hasn't got the blood off"* (line 33) as she simultaneously gestures towards the patient's lap where the therabite is located (line 40). Here the GSLT-L seeks to address the contingency in the fulfilment of the initial request as a result of the patient's declarative. The SSLT agrees that the contingency should be addressed, in order to facilitate the fulfilment of the initial request (line 42).

Following from this, on line 43 (Extract presented below) the GSLT-L produces a declarative that she'll delay the action of cleaning the therabite following the regime as she redirects her gaze to the patient from the SSLT. This mitigates the patient's contingency within the interaction, which isn't taken up by the patient in the following turns and allows for the continuation in the fulfilment of the initial request. The SSLT also acknowledges the cleaning of the therabite in overlapping talk with the GSLT-L (line 46) framed as a collaborative endeavour. From this, the patient produces an imperative to establish if the requested action should be enacted in that moment "*d'you want me to do it now is it?"* (Line 47). During her utterance, the patient redirects her gaze from the SSLT to the GSLT-L, orienting to both participants with her utterance (line 48). The SSLT responds in the next turn acknowledging the patient's imperative (line 49), which occurs in overlapping talk as the patient self-selects, her utterance inaudible during the overlapping talk. During her inaudible utterance, thepatient points to her mouth and raises the therabite from her lap, projecting non-verbal information to the SSLT and GSLT-L and demonstrating participant alignment through her actions, demonstrating the location and equipment relevant for the course of action. The GSLT-L produces an acknowledgement token in the following turn, her gaze still directed towards the patient. From this the SSLT self-selects with her imperative "*yeah so go gentle in on that erm left side"* (line 53). During her utterance, the SSLT projects non-verbal information as she

raises her hand to the left side of jaw before producing her verbal utterance regarding location "*left side" (*line 55). Meanwhile, the patient redirects her gaze from the SSLT to the therabite, demonstrating understanding of the ongoing course of actions involving the therabite equipment.

Extract 19b- preparing to fulfil the initial request (9) <00.32.55>

43	GSLT-L	**{**[yeah] so i'll clean it after
44	GSLT-L	***{turns gaze to patient***
45		[when when ( )]
46	SSLT	[yeah yeah we can do that]
47	P	**{**d'you want me to do it **{**now is it?
48	P	***{turns gaze to SSLT {turns gaze to GSLT-L***
49	SSLT	yeah just jus have [just to see]
50	P	**{**[ )]
51	P	**{points to mouth, raises therabite from lap**
52	GSLT-L	Yep
53	SSLT	**{**yeah so go **{**gentle in on that erm **{**left side
54		***{turns gaze to SSLT {turns gaze to therabite***
55	SSLT	***{raises hand to left side of jaw***
56		(1)
57	SSLT	so maybe get it in the left side first is it
58	P	***Moves therabite slowly into mouth from left side (1.9)***
59	GSLT-L	Yeah
60	GSLT-	***Moves head and gaze from patients left to right side***
61		(2.1)
62	GSLT-L	there we are (.) done (.) oka:y
63	P	***Therabite fully in mouth***
64	SSLT	lets just see how you [feel]
65	GSLT-L	**{**[okay] we're in
66	GSLT-L	***{turns gaze to SSLT***

Following a 1 second pause (line 56), the SSLT holds the communicative floor and produces a further imperative oriented towards the patient to move the therabite into her mouth from the left side "*so maybe get it in the left side first is it"* (line 57) redesigned following from her previous imperative in line 45. The addition of *"is it"* to her utterance suggests a seeking of confirmation from the participants. Following this, the patient proceeds to move the therabite slowly into her mouth from the left side over the course of 1.9 seconds. Performing this action slowly demonstrates participant alignment from the patient regarding the SSLT's previous imperative (line 58) specifically with being "*gentle*". The GSLT-L then produces a response token, her gaze still directed towards the patient as she proceeds to move her gaze round to patient's right side of her mouth from her left. Following a 2.1 second silence, the GSLT-L holds the communicative floor and verbally acknowledges the patient's completion of putting the therabite in her mouth "*there we are (.) done (.) okay"* (line 62). This creates a common frame of interaction for the SSLT, through informing her that the action of the patient putting the therabite in her mouth has been achieved. The SSLT then produces a declarative *"lets just see how you feel"* (line 64) framed as collaborative endeavour through "*let's*". Towards the end of her utterance, an interjection occurs from the GSLT-L who further acknowledges the therabite equipment in the patient's mouth as she redirects her gaze to the SSLT "*okay we're in"* (line 66) framed as a collaborative endeavour inclusive to the patient and the GSLT-L and demonstrating to the SSLT the achievement of the action required for the fulfilment of the initial request (lines 65).

From the initial acceptance of the request, the participants have worked in collaboration with one another to further achieve the fulfilment of the initial request. At this point (Extract 19c), the patient has the therabite in her mouth and has met the preparatory conditions in order to fulfil the initial request, attempting the thirty second therabite regime. From this, the SSLT utters an imperative for the GSLT-L to count due to her proximity, and therefore better perspective of the patient (line 67). The GSLT-L in the following turn redirects her gaze to the SSLT during 1.4 seconds of silence, whereby the SSLT re-takes the communicative floor uttering the name of the GSLT-L in overlapping talk with the GSLT-L's interrogative "*d'you want me to count"* (line 71). This is acknowledged and justified by the SSLT in overlapping talk with the GSLT-L *"yeah yeah you can see"* (line 72). From this, the GSLT-L produces a response token as she nods "*yeah*" (line 73 and 74) and within her turn proceeds to utter her imperative towards the patient "*okay alright so squeeze in"* (line 73), demonstrated by her

change in gaze and leaning in towards the patient (line 74). The patient responds in the next turn verbally (line 75) and proceeds to squeeze down on the therabite (line 76).

Extract 19c- fulfilling the therabite regime (9) <00.32.55>

67	SSLT	{you wanna {count cause you can see better than me
68	SSLT	***{nods {slight point towards VC equipment***
69	GSLT-L	***gaze directed towards SSLT (1.4)***
70	SSLT	[Luce]
71	GSLT-L	[d'you] want [me to] count?
72	SSLT	[yeah] yeah you can see
73	GSLT-L	{yeah {okay alright so squeeze in
74		***{nods {turns gaze to patient and leans in***
75	P	Kay
76	P	***Squeezes down on therabite***
77	GSLT-L	One
78		(0.4)
79	GSLT-L	two
80		(0.5)
81	GSLT-L	three
82		(0.6)
83	GSLT-L	{four
84	GSLT-L	***{directs gaze downwards, and back towards patient***
85		(0.5)
86	GSLT-L	five
87		(0.4)
88	GSLT-L	six
89		(0.5)
90	GSLT-L	seven
91		(0.6)
92	GSLT-L	eight
93		(0.7)

94 GSLT- nine
L
95 (0.6)
96 GSLT- ten
L
97 (0.7)
98 GSLT- eleven
L
99 (0.7)
100 GSLT- twelve
L
101 (0.5)
102 GSLT- Thirteen
L
103 (0.6)
104 GSLT- Fourteen
L
105 (0.6)
106 GSLT- Fifteen
L
107 (0.6)
108 GSLT- Sixteen
L
109 (0.5)
110 GSLT- Seventeen
L
111 (0.6)
112 GSLT- Eighteen
L
113 (0.7)
114 GSLT- Nineteen
L
115 (0.7)
116 GSLT- Twenty
L
117 (0.6)
118 GSLT- Twenty one
L
119 (0.7)
120 GSLT- Twenty two
L
121 (0.7)
122 GSLT- Twenty three
L
123 (0.7)
124 GSLT- Twenty four
L
125 (0.8)

126	GSLT-L	Twenty five
127		(0.7)
128	GSLT-L	Twenty six
129		(0.7)
130	GSLT-L	Twenty seven
131		(0.8)
132	GSLT-L	Twenty eight
133		(0.8)
134	GSLT-L	Twenty nine
135		(0.7)
136	GSLT-L	Thirty
137	P	***Removes therabite from mouth***
138	SSLT	okay
139	GSLT-L	how did that fe[el?]
140	SSLT	[are] you alright?
141	P	yeah that was alright yeah that wasn't so bad
142	SSLT	↑o:kay

From the patient's embodied action of squeezing down on the therabite, the GSLT-L holds the communicative floor and enacts the counting sequence for the thirty second regime whereby she counts from one to thirty (lines 77-136). During the thirty second regime, we can observe inconsistent pauses in the duration between each verbal utterance, maintaining a time of 0.7 and 0.8 as the GSLT gets to twenty (line 116). Following the counting sequence, the patient removes the therabite from her mouth (Line 137) and the GSLT-L and SSLT check in with the patient in overlapping talk, with the GSLT-L designing her utterance around the feeling of the therabite *"how did that feel"* (line 139) and the SSLT designing her utterance around if the patient is okay "*are you alright?"* (Line 140). The patient then responds to the GSLT-L's interrogative in the following turn, acknowledging that the hold wasn't so bad *"yeah that was alright yeah that wasn't so bad"* (line 141). The SSLT then produces her acknowledgment token in the following turn with increased intonation (line 142).

Over the course of this sequence, we can observe the patient's acceptance for the SSLT's initial request early on in the interaction (line 25). From this, the fulfilment of the request is only achieved following the completion of the thirtysecond therabite regime, which

is collaboratively achieved by the patient and GSLT-L, enacting different components of the initial request in order to achieve its fulfilment.

The acceptance and fulfilment of extended requests allows participants to orient to the fulfilment of requests. Within this mode of responding, the participants first demonstrate their acceptance to the fulfilment of the extended request sequence, followed by carrying out components of what are being requested. The acceptance demonstrates to the participants or requester that the fulfilment of the request will follow (Rauniomaa & Keisanen, 2012).

This section has examined how the fulfilment of medical tasks is achieved in extended request sequences. In response to the SSLTs request, the GSLT engages in actions of incipient fulfilment which makes the fulfilment of the request possible. This was identified as making objects relevant and bodily positioning allowing the GSLT to demonstrate understanding that the fulfilment of the request was underway and also increasing the ease in which to fulfil the request. The GSLT's actions of incipient fulfilment relating to her positioning, are designed to facilitate the fulfilment of the initial request, whilst allowing the SSLT a line of sight towards the ongoing fulfilment, creating a participation space which is maintained and practically accomplished by the participants (Goodwin, 1986; Mondada, 2008). That is to say, that the embodied actions of the GSLT allow for the observation of features relevant to the ecology of action (Mondada 2014).

From this consideration was given to the formats of responding to extended requests. Both forms of responding to requests, through acceptance and fulfilment and through immediate extended fulfilment, have been previously observed within co-present interactions (Rauniomaa & Keisanen, 2012) and telephone conversations (Sorjonen, 2001). This study has extended the notion of immediate fulfilment, considering how the immediate fulfilment of requests becomes extended as a result of problem presentation and interjections. This section has also demonstrated how similar formats to responding to requests are drawn on during videoconferencing interactions. One consistency between the formats of responding, is the crucial role of the GSLT in facilitating request making and the fulfilment of extended requests. Considering facilitating request making, the patient actively orients to the GSLT conveying her expectation that the recipient is in a better position to provide a solution to the trouble during the interaction (Bolden, 2011). Within the context of telemedicine videoconferencing, the proximity of the GSLT to the patient allows her to more easily repair the interaction. This supports research by Bolden (2011) in that this allows the GSLT and

patient t to resolve the trouble through the clarification with minimal interference to the main activity by "subordinating repair to the focal course of action" (Bolden, 2011. Pg. 259) whilst allowing them to more immediately repair the trouble (Kraut, Fussell, Brennan & Seigel, 2002). The GSLT's actions form an active role in granting the fulfilment of the medical task. The non-verbal actions of the GSLT throughout the extracts are integral to granting the fulfilment of initial requests within the extended sequences.

5 DISCUSSION AND CONCLUSIONS

This research aimed to explore how extended request sequences were designed and responded to in physical examinations to facilitate the fulfilment of medical tasks. Specifically, this entailed considering how requests were designed and negotiated, followed by considering the responses and fulfilment of those requests whilst considering the roles of embodied actions in facilitating understanding. This analysis has demonstrated that within telemedicine speech language therapy consultations, the use of extended requests is a means of achieving medical tasks during physical examination sequences between the participants.

From the analysis, distinct features of request sequences and their design, as well as their accompanying embodied actions, have been identified in facilitating the fulfilment of extended requests and thus the achievement of medical tasks. These include extended requests as projecting a course of action to the recipients, informing them of the required actions for the achievement of the medical task. With this, a collection of extended requests were framed as collaborative endeavours through the plural pronoun 'we' which functioned to align with certain courses of actions and include the recipients as equal in the fulfilment of the requested actions. Embodied actions were also observed to be designed with extended requests in order to provide additional information to elicit the preferred response. In fulfilment of these requests this study found that the GSLT and patient engaged in actions of incipient fulfilment, which demonstrated the recipients taking steps towards the fulfilment of the requests. Within the study, the two forms of incipient fulfilment concerned making objects relevant and bodily positioning which was recipient designed to provide visual access to the SSLT in observing the fulfilment of the requests. Unsurprisingly, the fulfilment of extended requests was also extended as the components were undertaken over sequences of talk. Two formats of responding to these extended requests were evident. One format demonstrated initial acceptance followed by undertaking the extended fulfilment of the request over the subsequent turns at talk which functioned to demonstrate to the SSLT understanding and acceptance of the requested actions. In the second format, the immediate extended fulfilment of requests demonstrated that whilst participants immediately take actions towards its fulfilment, it became further extended as a result of problem presentation highlighted by the GSLT and/or patient or due to an interjection resulting in temporary distraction from fulfilling the requested action.

The integral role of the GSLT in both request making and fulfilment of these requests was evident. The GSLT facilitated request making through clarifying requested actions for the patient and facilitated the fulfilment of requests through physically performing requested actions and increasing the patient's embodied actions. Thus in the context of telemedicine consultations the GSLT becomes a critical intermediary between the patient and SSLT when achieving medical tasks.

In the following sections, the main findings of the analysis are discussed, examining the sequencing and design of extended request sequences from the data, with consideration of the collaborative fulfilment of medical tasks within extended requests. From this, the integral role of the GSLT in the fulfilment of extended requests and thus medical tasks is discussed. Finally, consideration will be given to addressing the theoretical and practical implications of the study, strengths and limitations and directions for future research.

5.1 Extended Requests as collaborative endeavours in Telemedicine videoconferencing

The analysis has shown that extended request sequences allowed for fulfilment of medical tasks with physical examination sequences. Within face to face consultations, sequences of talk are highly structured events, where patients draw on interactional practices implemented in everyday interaction (Ten Have, 2005; Maynard & Heritage, 2005). Similarly, this organisation can be observed through the orderliness of the extended request sequences within the telemedicine consultations. Figure 5.1 below displays the tree diagram presented in the analysis as a reminder and to emphasise the structure of extended request sequences and the aspects considered in relation to each component of the request.

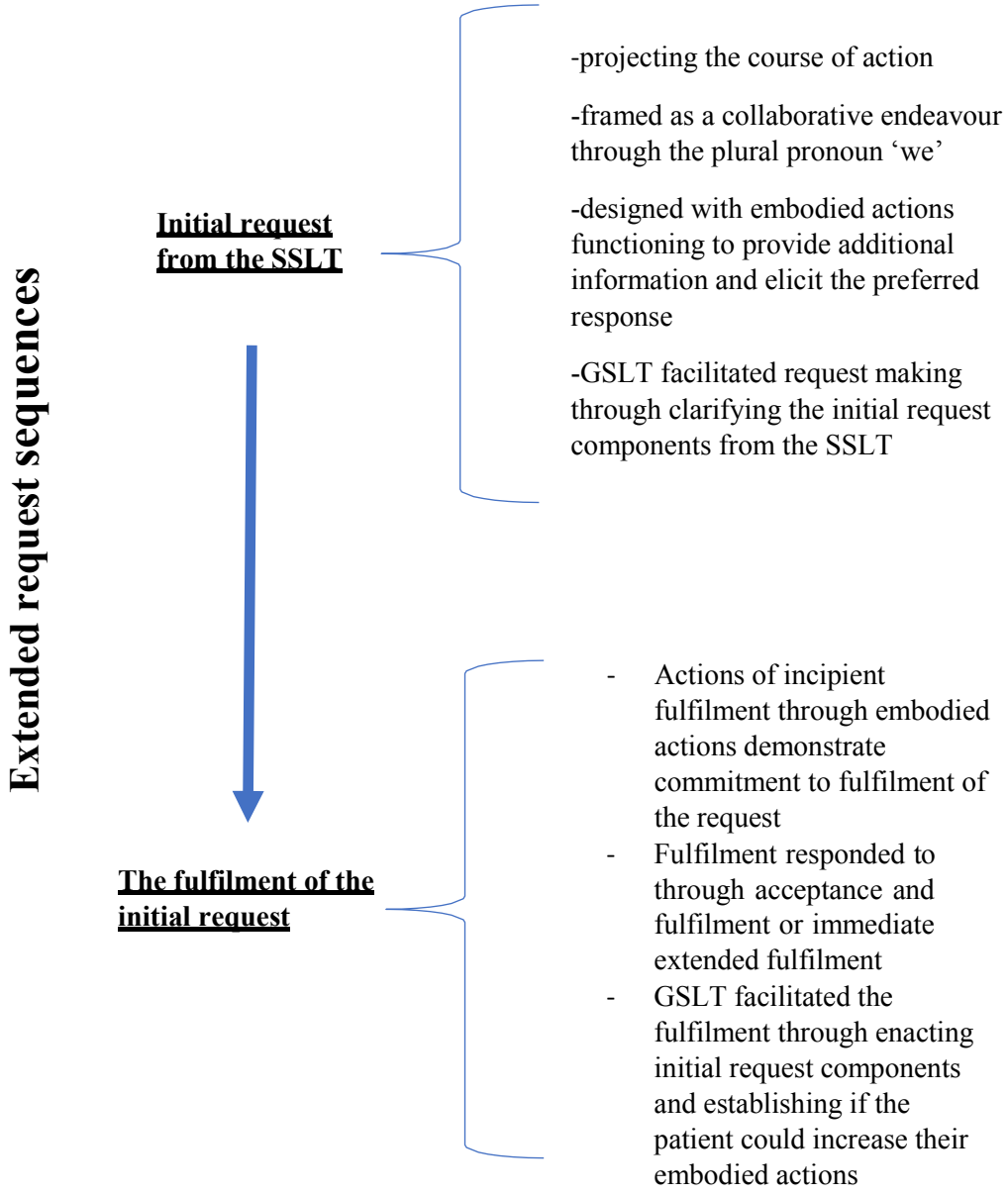

Figure 5.1 Overall sequencing of extended requests in SLT telemedicine physical examinations

As discussed, traditionally requests have been considered as occurring as adjacency pairs with the response to the request occurring in the following turn (Schegloff & Sacks, 1973). However, this analysis has built on previous literature by Lee (2009) who demonstrated that first part request components are enacted over a set of sequences, thus making the requested extended. The features of extended request sequences within the data bare similarities to those considered by Lee (2009) in that what is being requested is sequentially produced over a series of turn construction units. The completion of the request is not achieved immediately and is undertaken by the patient and GSLT through enacting components towards

its fulfilment. This study however also sought to build on Lee (2009) with considering how participants collaboratively fulfil medical tasks through extended request sequences rather than how participants construct and specify request components. The following study also addressed how participants responded to initial requests which consisted of a two part response of acceptance followed by fulfilment and a one part response of the immediate extended fulfilment. These findings bear similarities to those discussed by Rauniomaa & Keisanen (2012) who found that in co-present interactions participants responded either by providing initial acceptance to the request which functions to display orientation to the forthcoming course of actions, followed by the future fulfilment of the request or through immediately fulfilling the request. A difference noted within this study in comparison to research by Rauniomaa and Keisanen, (2012) concerns the immediate extended fulfilment rather than immediate fulfilment of initial requests over the extended sequence. Whilst the patient and GSLT were observed to immediately undertake actions towards the fulfilment of the request, the request itself was unpacked over sequences of talk (Lee, 2009) and was further extended due to problem presentation from the patient and/or GSLT or an interjection.

Within the study, the SSLT was the prime instigator of initial request which projected the course of action to the patient and GSLT in its fulfilment. The SSLT's initial request orchestrated the courses of action for the patient and GSLT through interrogative and imperative request formats that were framed as collaborative endeavours.

The organisation of collaborative work is of upmost importance, particularly in novel interactional settings such as telemedicine, as the ability to successfully collaborate has been identified to impact on the quality of patient care (Hindmarsh & Pilnick, 2007). Pappas & Seale (2010) identified three components of collaborative work within telemedicine. Firstly, the unique position of the nurse in undertaking activities that in face to face consultations they wouldn't be required to undertake, secondly additional information regarding the examination being available to the patient and thirdly, the loss of control of the specialist concerning the activities being undertaken. This study supports the claims of Pappas & Seale (2010) in that the GSLT was actively involved in undertaking physical examination components, more information was made available to the patient regarding actions towards the fulfilment of extended requests and the SSLT lost a degree of control over the components in the fulfilment of extended requests.

A novel finding from this study concerns the initial requests within the extended sequence being designed as collaborative endeavours through the use of the plural pronoun '*we*'. Through this plural pronoun, the SSLT aligned herself with courses of action to be undertaken by the GSLT within initial requests. The use of the plural pronoun demonstrates participant alignment (Goffman, 1981) and emphasises group membership as demonstrated by Pyykko (2002) within political discourse, where 'we' in Russian speeches has been shown to align with different political groups and in turn reinforce an ideological position. Within the current study, the use of the plural pronoun emphasised the request as a collaborative endeavour, treating the participants as equals in its fulfilment. The inclusive use of *'we'* allowed the SSLT to frame herself as involved in the fulfilment of the initial request that she was unable to fulfil due to the interactional restrictions of the telemedicine videoconferencing. Telemedicine presents individuals with novel organisational, technological and situational dilemmas, which are argued to be resolved through collaborative interactional work (Pappas & Seale, 2010). With this in mind, it is suggested that the use of this plural pronoun facilitates effective doctor-patient communication. Even though the SSLT is unable to physically fulfil her own requested actions, she nevertheless frames the extended request sequence as a collaborative endeavour, which includes all participants in its undertaking and detracts from the presence of the videoconferencing equipment as a restriction within the interaction. It is argued that through adopting the plural pronoun, the SSLT includes the patient as an equal in the fulfilment of the requested actions, which has been identified as being a crucial aspect in advocating a relationship centered approach between health-care professionals and patients (Ong,De Haes, Hoos, & Lammes, 1995) Furthermore, DiMatteo (1998) suggested that lack of collaborative decision making can result in patients feeling disempowered to achieve medical outcomes. It is suggested that the plural pronoun 'we' can facilitate feelings of empowerment with patients as it includes them as an equal in the fulfilment of medical tasks. These aspects are argued to facilitate an effective interpersonal relationship which is achieved through framing courses of actions as collaborative endeavours and has been demonstrated with regards to collaborative decision making (Feudtner, 2007).

This study also observed the function and design of embodied actions occurring with the initial request in eliciting the preferred response through quoting components of the initial request and providing additional non-verbal information to the patient. This study supports previous literature by Kendon, (1997) and Goodwin, (2004) who demonstrated that embodied actions were sequentially organised and designed with verbal utterances, allowing each

semiotic resource to elaborate one another. Within the following study, the SSLT's embodied actions were designed to quote action components of the request as a means of eliciting the preferred response. The SSLT was found to draw on iconic gestures (Mcneil, 1992) to depict the content of her verbal utterances and quote components of the requested actions such as pinching gestures or pointing gestures. This provided the patient with additional information regarding the preferred response and location regarding the ongoing courses of action in the fulfilment of initial requests. Previous research has identified that gestures can function to provide additional and specific information on how a turn is to be completed (Taleghani-Nikazm, 2008) and that gestures are recipient designed (Sacks, Schegloff & Jefferson, 1974). Within this study, the SSLT's embodied actions allowed her to provide additional information regarding the preferred response in the fulfilment of requests which were designed alongside her initial requests. The novelty of this finding lies in the use of embodied actions to elicit the preferred response within the context of videoconferencing compared to co-present interactions as investigated by Taleghani-Nikazm, (2008). This also builds on research by Pappas and Seale (2010) in that these embodied actions were also relied upon in order to overcome trouble, with the SSLT providing additional information through her embodied actions to elicit the preferred response.

From the initial request, this study considered the ways in which the patient and GSLT responded to and fulfilled the requested actions over the extended sequence. Initially, consideration was given to the actions of incipient fulfilment which make the actual fulfilment of the request possible (Rauniomaa & Keisanen, 2012). The GSLT and patient through actions of incipient fulfilment demonstrated an understanding of the actions required for the fulfilment of the initial requests in extended sequences whilst also providing a sense of the trajectory of actions in the collaborative fulfilment of initial requests (Hindmarsh & Pilnick, 2002)

Two means by which these were demonstrated were through making objects relevant and bodily positioning. Objects were found to be mobilised during the extended sequences and were embedded into the ongoing fulfilment of the initial request (Hindmarsh & Heath, 2000). Bodily positioning of the GSLT and patient was utilised during the fulfilment in order to increase the grantability of the requested actions whilst maintaining visual access to the SSLT. A novel finding within the data relating to body position concerns the GSLT always positioning herself to the right side of the patient. This action of incipient fulfilment was found to serve two functions. Firstly, it demonstrated to the SSLT that the fulfilment of the request was underway as preparatory actions (Hindmarsh, Reynolds & Dunne, 2009), which showed

understanding of the actions required from the patient and GSLT towards the fulfilment of the request. Secondly, it provides visual access to the SSLT and allow for a joint frame of attention during the ongoing fulfilment of the request (Kraut, Fussel & Siegel, 2003). This has been demonstrated in research by Heath & Luff (1992) who found that video mediated interaction users were required to systematically control their visual and auditory accessibility to one another during ongoing courses of action. Within this study, the orientation of the GSLT and patient towards the videoconferencing equipment allowed them to manage interactional restrictions with the telemedicine equipment through providing visual access to the SSLT to their embodied conduct in the fulfilment of the initial request. Within telemedicine videoconferencing, the actions of incipient fulfilment provide a useful resource in demonstrating understanding of what is required in the fulfilment of initial requests over extended sequences and compensate for the restrictions encompassed with the medium. Providing visual access to these actions, allows the SSLT to maintain a common frame of attention in the fulfilment of the requested actions and the achievement of the medical task,

A further key finding identified from the analysis in the fulfilment of extended request sequences concerns the integral role of the GSLT. Previous research by Macfarlane et al (2006) has argued that general practioners play a passive role in telemedicine consultations. However, in line with other studies (Pappas & Seale, 2010; Nickelsen, 2018) that found an enhanced role of the nurse in telemedicine consultations, this study found that the GSLT was actively involved in two aspects of the fulfilment of request, which relate to the request making and fulfilment of requests.

The GSLT facilitated request making through clarifying initial request components for the patient, facilitating understanding regarding the fulfilment of the initial request. In clarifying components of the initial request, the patient actively oriented to the GSLT through their redirection of gaze, displaying attention to that speaker (Goodwin, 1980). Bolden (2011) found that in face to face conversations the reasons which lead an other clarifying related to progressivity and social epistemic. Progressivity refers to the individual seeking clarification attempts to resolve the issue with minimal interference to the main activity. Social epistemic in others clarifying concerns who is most competent and best able to resolve the trouble during talk (Bolden, 2011). This study echoes these notions in the GSLT being selected by the patient in clarifying requested components. Arguably, this is due to the restricted environment encompassed within the medium of telemedicine and the proximity between the GSLT and patient, allowing ease in which to repair problematic talk and its impact on the main course of

action and therefore facilitates progressivity. With social epistemics, the GSLT may be perceived as more competent by the patient to clarify requested components given the proximity to one another and thus ease in which components can be clarified. The clarifying of request making occurred as a result of the patient and GSLT being engaged in an alternative course of action or as a result of the patient mishearing the SSLT's previous utterance.

The other aspect concerns the GSLT's role in facilitating the fulfilment of requests. This was achieved through different means including the request format implemented by the GSLT relating to the patient increasing their embodied actions allowed the GSLT to establish if the patient could do more than what was initially requested. The design of this request as an interrogative allowed the GSLT to establish information about whether the patient could provide more in response to the request prior to its fulfilment as well as including the patient as actively involved in the fulfilment of the request. A second aspect concerns the embodied actions of the GSLT in enacting the request components and facilitating the achievement of medical tasks. Whereas Pappas & Seale (2010) identified the nurse as performing minor procedures during telemedicine consultations, in this study the GSLT was actively involved and integral in conducting the physical examinations associated with the request and therefore facilitating their fulfilment. Similar to the research of Pappas & Seale (2010), the GSLT also confirmed observations whereby the SSLT alluded to difficulty in her perspective as a result of the technology and thus her ability to accurately assess symptoms. The introduction of distance impacts on the SSLT's ability to thoroughly examine, and most importantly touch, described as "*a cornerstone of health-care"* (Cartwright, 2000, pg.351). However, the novel challenges presented by the medium of telemedicine in achieving medical tasks were interactionally managed through the collaborative fulfilment of the extended requests.

With the fulfilment of extended requests, consideration can be given to the interactional asymmetries which occur arguably as a result of the medium of telemedicine. Traditionally asymmetry with doctor patient interaction has focused on asymmetries between patients and doctors (Ten-Have, 1991); however, within the medium of telemedicine, it can be observed that asymmetries in participation occur between the SSLT and GSLT. This asymmetry relates to the involvement between the SSLT and GSLT in facilitating request components and the GSLT demonstrates her understanding of this when enacting implicit requests, placing on her more responsibility and accountability to facilitate medical tasks (Nickelsen, 2018).

Having considered this, an important point to make is also how the SSLT plays a crucial role. Whilst the GSLT facilitates request making and the fulfilment of requests, the SSLT orchestrates courses of action within physical examinations. The SSLT was found to instigate the courses of action to be completed which were then collaboratively achieved between the participants in the following sequences. What this demonstrates is a strong cohesive relationship between the SSLT in projecting and directing courses of action and the GSLT in enacting the requested actions with both health-care professionals negotiating the achievement of medical tasks alongside the patient.

The findings discussed here have shown that extended request sequences allow for the fulfilment of medical tasks during telemedicine videoconferencing. Through framing extended requests as collaborative endeavours through the plural pronoun 'we', participants are treated as equal in the fulfilment of medical tasks which aids in facilitating a relationship centred approach to care. Given the novelty of telemedicine systems, extended request sequences elucidate a means by which health-care professionals can manage the novel interactional elements not present in face to face consultations and facilitate the achievement of medical tasks as a collaborative endeavour. In managing the novel interactional elements, the GSLT formed an integral part of facilitating request making and the fulfilment of requests. These aspects allow for the achievement of medical tasks with patients whilst facilitating an effective interpersonal relationship.

5.2 Considerations and development

A number of strengths and weaknesses of the current study are considered in the following section. Understanding interaction in healthcare environments benefits from the use of naturally occurring data utilised in this research. This allowed for the consideration of the use of telemedicine in practice and provided a better understanding of the interactional practices and dilemmas that participants encounter when adopting telemedicine technologies. This is an effective means of understanding the real-world dilemmas that occur during medical interactions and has important implications for further informing interaction using telemedicine technologies.

Regarding the weaknesses of the study, an aspect for consideration concerns the positioning of the cameras during data collection. Both cameras were located at a single site with one directed towards the SSLT and the other directed towards the VC equipment. With this, individuals were found to walk out of shot of the camera directed towards the VC equipment, resulting in missing parts of the interaction. A way to resolve this would be to have each camera located at the site in order to obtain a wider shot and capture all the aspects of the interaction.

From this study, future research could further build understanding in the fulfilment of medical tasks through extended request sequences when using videoconferencing equipment. With this, consideration could be given to framing medical tasks as collaborative endeavours when using videoconferencing as a means of facilitating a relationship centred approach and empowering patients in achieving medical outcomes. A further avenue for exploration concerns how collaboration is achieved between health-care professionals when using videoconferencing and the interactional devices which are drawn upon in order to achieve medical tasks.

5.3 Contributions to theory and clinical practice

5.3.1 Theoretical and practical Implications

This study has built on the limited existing literature regarding extended request sequences (Lee, 2009) and responses and fulfilment to requests (Rauniomaa & Keisanen, 2012) with the novel aspect of considering their implementation when using telemedicine videoconferencing. This study has further demonstrated the extended nature of requesting and how it is collaboratively achieved during physical examination sequences when using telemedicine videoconferencing.

The study has also contributed to the limited literature examining how the fulfilment of requests are achieved when adopting telemedicine videoconferencing, whereas in co-present interactions they have been demonstrated to be immediately fulfilled (Lee, 2009, Ruanuimaa & Keisanen, 2012). Whilst being immediately fulfilled in the sense that participants undertake actions towards the fulfilling the request, this analysis has shown means by which the fulfilment becomes further extended due to problem presentation in its fulfilment or due to an interjection which detracts from the course of action.

Finally, this study has identified the integral role of the general speech language therapist within the interactions. More generally, this eludes to the importance of the third person within telemedicine videoconferencing interactions as a mediator between the specialist and patient as well as being an active contributor to the consultations and achievement of medical tasks. This is argued here to require more understanding in comparison to face to face interactions to fully appreciate the role of this individual within this setting.

The adoption of telemedicine technologies to provide rehabilitation to individuals with communication difficulties encompasses novel interactional dilemmas that are organisational, situational and technological (Pappas & Seale, 2010). This study can help inform interactional practices that can be used within telemedicine speech language therapy consultations to facilitate the achievement of medical tasks and help in the management of these dilemmas. Through framing requests as collaborative endeavours, health-care professionals are able to facilitate a relationship centred approach to care through including the patient as an equal in the fulfilment of medical tasks.

5.4 Conclusion of Thesis

In conclusion, this study has examined extended request sequences within physical examination sequences using telemedicine videoconferencing equipment. This study is the first of its kind to examine how extended request sequences are designed and responded to during physical exam sequences in order to facilitate the fulfilment of medical tasks during speech language therapy telemedicine consultations. It has used the novel approach of applying CA to telemedicine consultations in the complex consultations of specialist speech and language therapy to better understand how medical tasks are achieved between participants. The thesis has provided novel understanding of how medical tasks can be framed as collaborative endeavours in order to facilitate effective health-care professional-patient communication. This detracts from the presence of the telemedicine equipment within the interaction and treats all participants as equal in the fulfilment of medical tasks. With this, the study has shown that embodied actions within telemedicine videoconferencing are designed with request components in order to elicit the preferred response to the requested actions. Finally, this study has also shown that the general speech language therapist played an integral role in facilitating the fulfilment of extended requests and compensated for the interactional

restrictions which arose due to the telemedicine videoconferencing equipment and has therefore made a significant contribution to the academic and clinical literature.

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Appendices

Appendix A Health-Care Provider Consent Form

Consent form

Centre number:

Study number:

Participant identification number:

Title of research: Negotiating conversation and interaction through videoconferencing in speech language therapy: A conversation analytic study

Name of researcher: David Dalley

By signing this consent form, I confirm that I have been made aware and agree to the following statements prior to taking part in the study;

Please initial box

1. I confirm that I have read and understand the nature of the study and what it entails from the health care professionals information sheet version 1 dated 07/03/2016 and have been provided with the opportunity to ask any questions and are satisfied with the responses	
2. I understand that my involvement in the study is voluntary and I have the right to withdraw from the study at any given time without providing a reason as to why.	
3. I understand that all personal data provided will be kept confidential and will only be accessed by my clinician or research team.	
4. I understand that should I lose the ability to consent at any point during the study then I shall be removed from the study and any data obtained up to that point will be utilised in the study though no further data shall be collected.	
5. I consent to the telehealth sessions being video recorded for the purposes of producing a full transcript of the interaction.	
6. I understand that the transcript will be anonymised using pseudonyms and that anything else giving away my identity will be removed.	
7. I understand that anonymised data extracts from the transcript will be published as part of the research project and dissertation and findings disseminated in the public domain (for example, in reports, conferences, and published articles).	

8. I understand that the anonymised transcript will be used to support other research in the future, and may be shared anonymously with other researchers.	
9. If more than one consultation is recorded, I understand that I am free to request that a particular session is not recorded during the data collection process	
10. I understand that relevant sections of the data collected during the study, may be looked at by the research team from Aberystwyth University (including researchers and transcription company), from regulatory authorities or from the NHS organisation, where it is relevant to my taking part in this research.	

Dissemination of results and use of video recordings

Please note that it is very helpful (although not essential) to be able to play the video or audio recordings when presenting the analysis. Therefore we ask participants to provide additional levels of consent for this purpose.

Please only initial boxes where you DO consent to this type of information being disseminated.

11. I agree that **audio recordings** obtained of the telehealth sessions may be used in the dissemination of results. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
12. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used in the dissemination of the results I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
13. I agree that **audio recordings** obtained of the telehealth sessions may be used for the purposes of teaching. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
14. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used for the purposes of teaching. I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
15. I would like a copy of the study and results upon completion	
16. I agree to take part in the study	

Name of participant Date Signature

Name of Researcher Date Signature

Appendix B Participant Consent Form

Consent form

Centre number:

Study number:

Participant identification number:

Title of research: Negotiating conversation and interaction through videoconferencing in speech language therapy: A conversation analytic study

Name of researcher: David Dalley

By signing this consent form, I confirm that I have been made aware and agree to the following statements prior to taking part in the study;

Please initial box

1. I confirm that I have read and understand the nature of the study and what it entails from the participant information sheet version 3 dated 05/02/2016 and have been provided with the opportunity to ask any questions and are satisfied with the responses	
2. I understand that my involvement in the study is voluntary and I have the right to withdraw from the study at any given time without providing a reason as to why and without any medical care being affected	
3. I understand that all personal data provided will be kept confidential and will only be accessed by my clinician or research team.	
4. I understand that should I lose the ability to consent at any point during the study then I shall be removed from the study and any data obtained up to that point will be utilised in the study though no further data shall be collected.	
5. I consent to the telehealth sessions being video recorded for the purposes of producing a full transcript of the interaction.	
6. I understand that the transcript will be anonymised using pseudonyms and that anything else giving away my identity will be removed.	
7. I understand that anonymised data extracts from the transcript will be published as part of the research project and dissertation and findings disseminated in the public domain (for	

example, in reports, conferences, and published articles).	
8. I understand that the anonymised transcript will be used to support other research in the future, and may be shared anonymously with other researchers.	
9. If more than one consultation is recorded, I understand that I am free to request that a particular session is not recorded during the data collection process	
10. I understand that relevant sections of the data collected during the study, may be looked at by the research team from Aberystwyth University (including researchers and transcription company), from regulatory authorities or from the NHS organisation, where it is relevant to my taking part in this research.	

Dissemination of results and use of video recordings

Please note that it is very helpful (although not essential) to be able to play the video or audio recordings when presenting the analysis. Therefore we ask participants to provide additional levels of consent for this purpose.

Please only initial boxes where you DO consent to this type of information being disseminated.

11. I agree that **audio recordings** obtained of the telehealth sessions may be used in the dissemination of results. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
12. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used in the dissemination of the results I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
13. I agree that **audio recordings** obtained of the telehealth sessions may be used for the purposes of teaching. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
14. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used for the purposes of teaching. I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
15. I would like a copy of the study and results upon completion	
16. I agree to take part in the study	

Name of participant Date Signature

Name of Researcher Date Signature

Appendix C Previously Recorded Footage Consent Form

Consent form

Centre number:

Study number:

Participant identification number:

Title of research: Negotiating conversation and interaction through videoconferencing in speech language therapy: A conversation analytic study

Name of researcher: David Dalley

By signing this consent form, I confirm that I have been made aware and agree to the following statements prior to taking part in the study;

Please initial box

1. I confirm that I have read and understand the nature of the study and what it entails from the participant information sheet version 1 dated 26/04/16 and have been provided with the opportunity to ask any questions and are satisfied with the responses	
2. I understand that my involvement in the study is voluntary and I have the right to withdraw from the study at any given time without providing a reason as to why and without any medical care being affected	
3. I understand that all personal data provided will be kept confidential and will only be accessed by my clinician or research team.	
4. I consent to previously recorded telehealth sessions being used for the purposes of producing a full transcript of the interaction.	
5. I understand that the transcript will be anonymised using pseudonyms and that anything else giving away my identity will be removed.	
6. I understand that anonymised data extracts from the transcript will be published as part of the research project and dissertation and findings disseminated in the public domain (for example, in reports, conferences, and published articles).	
7. I understand that the anonymised transcript will be used to support other research in	

the future, and may be shared anonymously with other researchers.	
8. If more than one previously recorded consultation is used, I understand that I am free to request that a particular session is not used during the data collection process	
9. I understand that relevant sections of the data collected during the study, may be looked at by the research team from Aberystwyth University (including researchers and transcription company), from regulatory authorities or from the NHS organisation, where it is relevant to my taking part in this research.	

Dissemination of results and use of video recordings

Please note that it is very helpful (although not essential) to be able to play the video or audio recordings when presenting the analysis. Therefore we ask participants to provide additional levels of consent for this purpose.

Please only initial boxes where you DO consent to this type of information being disseminated.

10. I agree that **audio recordings** obtained of the telehealth sessions may be used in the dissemination of results. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
11. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used in the dissemination of the results I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
12. I agree that **audio recordings** obtained of the telehealth sessions may be used for the purposes of teaching. Although I might be identified by my voice, I understand that any other aspect of the audio data that reveals my identity will be edited (dubbed out). I provide my consent for the audio data to be used in this way.	
13. I agree that **video recordings** (and still shots where applicable) obtained of the telehealth sessions may be produced and used for the purposes of teaching. I understand that use of the video recordings may prevent my anonymity and that I may be identifiable. However, any other aspects of the data that reveals my identity will be edited (dubbed out). I provide my consent for the video data to be used in this way.	
14. I would like a copy of the study and results upon completion	
15. I agree for my previously recorded telehealth sessions to be used within the study	

Name of participant Date Signature

Name of Researcher Date Signature

Appendix D Jefferson Transcription System

Symbol	Name	Use
[text]	Brackets	Indicates the start and end points of overlapping speech.
=	Equal Sign	Indicates the break and subsequent continuation of a single interrupted utterance.
(no of seconds)	Timed Pause	A number in parentheses indicates the time, in seconds, of a pause in speech.
(.)	Micropause	A brief pause, usually less than 0.2 seconds.
. or ↓	Period or Down Arrow	Indicates falling pitch.
? or ↑	Question Mark or Up Arrow	Indicates rising pitch.
,	Comma	Indicates a temporary rise or fall in intonation.
-	Hyphen	Indicates an abrupt halt or interruption in utterance.
>text<	Greater than / Less than symbols	Indicates that the enclosed speech was delivered more rapidly than usual for the speaker.
<text>	Less than / Greater than symbols	Indicates that the enclosed speech was delivered more slowly than usual for the speaker.
°	Degree symbol	Indicates whisper or reduced volume speech.
ALL CAPS	Capitalized text	Indicates shouted or increased volume speech.
underline	Underlined text	Indicates the speaker is emphasizing or stressing the speech.
:::	Colon(s)	Indicates prolongation of an utterance.
(hhh)		Audible exhalation
? or (.hhh)	High Dot	Audible inhalation
(text)	Parentheses	Speech which is unclear or in doubt in the transcript.
((italic text))	Double Parentheses	Speech which is unclear

{ Bracket simultaneous embodied action

Appendix E Participant Information Sheet

Participant information sheet

Title: Health care professionals and patients interaction in telehealth: A conversation analytic study.

You are being invited to take part in a study which is interested in how conversations are managed when consultations are delivered via videoconference or tele-health. It is important that you as a potential participant take the time to read through the information sheet and if you are uncertain on information, please feel free to contact the researcher through the contact information provided below.

What is the purpose of the project?

This project is being conducted as part of a Masters of Philosophy (Mphil) degree with Aberystwyth University. The project is interested in exploring how interactions between healthcare professionals and patients are negotiated when consultations are delivered by videoconference systems. Interaction has been identified as an important factor in healthcare between professionals and patients providing the opportunity for patients to build rapport with their medical staff and for important information to be communicated by both parties. Tele-health is increasingly being used in clinical settings to provide access to specialist care for patients without the need for travelling long distances. With this in mind, it is important for research to consider how conversations are managed in videoconference consultations so that best practice around patient services are ensured. Speech and language therapy provides a particularly useful context in which to study this because of the additional challenges around communication that already exist. This study intends to build upon the literature concerning interactions between healthcare professionals and patients whilst attempting to explore more novel aspects of the interactions as a result of videoconference delivery.

You are being invited to take part in this research because you are a patient or health care professional who has previously taken part in speech and language therapy via telehealth consultations which were recorded.

What will happen to me if I take part?

If you choose to take part in the study, you will not necessarily be required to take on any tasks.

With your permission, your previously recorded telehealth consultation will be used for the purposes of the study. In order to consent to this process please return a completed consent form to the Chief researcher using the contact details overleaf or return the consent form to the Speech and Language team at your convenience. This study draws on different levels of consent. You may consent to the use of different types of data to be used in the study. This entails providing consent for each form of data collection individually, specifically audio recordings, use of quotes in transcriptions and video recordings. Any verbatim quotes used in transcriptions or audio recordings used within the study will be anonymised.

If are still receiving speech language therapy through telehealth consultations then you may also be offered the opportunity to have subsequent telehealth sessions recorded. If you are interested in participating in this way then please discuss this with your speech and language therapist.

If you decide that you do not wish to take part then no further action is required. Please be assured that if you are still receiving speech language therapy through telehealth consultations then this will have no bearing on your usual care and your telehealth consultation will continue as normal.

If you choose to take part but later change your mind, you may withdraw from the study at any given time. To withdraw from the study, please inform the health-care professional coordinating the videconference/telehealth sessions or contact the researcher through the email below. Following this, you will be provided with a withdrawal form and any recordings that you have provided will be destroyed and no further data will be collected.

This study draws on different levels of consent. You may consent to the use of different types of data to be used in the study. This entails providing consent for each form of data collection individually, specifically audio recordings, use of quotes in transcriptions and video recordings. Any verbatim quotes used in transcriptions or audio recordings used within the study will be anonymised.

What are the possible disadvantages and risks of taking part?

The nature of the study does not require your involvement beyond that of consenting to the use of previously recorded telehealth consultations and as a result there are no foreseen disadvantages or risks should you choose to take part in the study. However, because your face will be visible on any recordings your identity and the nature of your illness/treatment will be visible to the research team. Further details about how we will ensure your anonymity in data presented is available in the section below.

Will my taking part in this project be kept confidential?

The project will ensure that any personal data obtained through recordings or transcriptions will be anonymised when used in the final publication or when presenting results at conferences. This will be achieved through providing participants with pseudonyms and removing any identifiable data from the transcriptions. In the case of the audio and video recordings, any identifiable data will be removed (dubbed out), however, a participant's appearance or speaking voice cannot be anonymised in the audio or video recordings. In regards to this, the project has different layers of consent in terms of the use of your data within the project. For example you may consent to the use of anonymised audio recordings and transcripts and not to the use of video.

Who has reviewed the project?

This project has been conducted in line with the British psychological society (BPS) code of ethics and has been reviewed by the NHS research ethics committee and given a favourable appraisal.

Contact for further information

Researcher : David Dalley	Supervisor: Dr Rachel Rahman
Address: Department of psychology	Email: Rjr@aber.ac.uk
Penbryn 5	
Penglais Campus	
Aberystwyth university, Ceredigion	
SY23 3UX	
Email: Dad34@aber.ac.uk	

Appendix F Health-Care Professional Information Sheet

Health care professional information sheet

Title: Health care professionals and patients interaction in telehealth: A conversation analytic study.
You are being invited to take part in a study which is interested in how conversations are managed when consultations are delivered via videoconference or tele-health. It is important that you as a potential participant take the time to read through the information sheet and if you are uncertain about any information, please feel free to contact the researcher through the contact information provided below.

What is the purpose of the project?
This project is being conducted as part of a Masters of Philosophy (Mphil) degree with Aberystwyth University. The project is interested in exploring how interactions between healthcare professionals and patients are negotiated when consultations are delivered by videoconference systems. Interaction has been identified as an important factor in healthcare between professionals and patients providing the opportunity for patients to build rapport with their medical staff and for important information to be communicated by both parties. Tele-health is increasingly being used in clinical settings to provide access to specialist care for patients without the need for travelling long distances. With this in mind, it is important for research to consider how conversations are managed in videoconference consultations so that best practice around patient services are ensured. Speech and language therapy provides a particularly useful context in which to study this because of the additional challenges around communication that already exist. This study intends to build upon the literature concerning interactions between healthcare professionals and patients whilst attempting to explore more novel aspects of the interactions as a result of videoconference delivery.

You are being invited to take part in this research because you are a health care professional who conducts and assists in speech and language therapy via telehealth.

What will happen to me if I take part?
If you choose to take part in the study, you will not be required to do any additional tasks outside of the regular telehealth session/s. With your permission, the telehealth consultation will be recorded through the use of cameras set-up in the room. Please be assured that the study will not be assessing your professional capabilities nor conduct. Rather the research is interested in how communication during telehealth sessions is negotiated.

As a health care professional taking part within the study, we would seek consent once prior to any data collection to enable us to record any telehealth consultations that you are involved

with. However, please be assured that you retain the right to request that any session is not recorded ahead of it taking place. Similarly, if you are unhappy with a particular consultation after the event, you have the right to request the removal of the consultation from the study. To do this, you simply need to inform the lead speech and language therapist organising the recording equipment or contact the research team directly.

This study draws on different levels of consent. You may consent to the use of different types of data to be used in the study. This entails providing consent for each form of data collection individually, specifically audio recordings, use of quotes in transcriptions and video recordings. Any verbatim quotes used in transcriptions or audio recordings used within the study will be anonymised (this is explained further below).

What are the possible disadvantages and risks of taking part?
The nature of the study does not require your involvement beyond that of your routine consultation and as a result there are no foreseen disadvantages or risks in taking part within the study. However, because your face will be visible on any recordings your identity will be visible to the research team. Further details about how we will ensure your anonymity in data presented is available in the section below.

Will my taking part in this project be kept confidential?
The project will ensure that any data obtained through audio recordings or transcriptions will be anonymised when used in the final publication or conferences. This will be achieved through providing participants with pseudonyms. Any identifiable data from the transcriptions will be removed from the study and any identifiable data from the audio recordings will be removed (dubbed). Any data obtained from the video recordings cannot be kept confidential. In regards to this, the project has different layers of consent in terms of the use of your data within the project. For example you may consent to the use of anonymised audio recordings and transcripts and not to the use of video recordings which cannot be anonymised.

Who has reviewed the project?
This project has been conducted in line with the British psychological society (BPS) code of ethics
and has been reviewed by the NHS research ethics committee and given a favourable appraisal.

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